

ANXIETY SYMPTOMS IN SOUTH AFRICAN YOUTHS:  
THEIR ASSESSMENT AND RELATIONSHIP WITH STRESSFUL LIFE EVENTS

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Thesis presented in fulfilment of the requirements for the degree Master of Arts  
(Psychology) at Stellenbosch University



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March 2008

## **DECLARATION**

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

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Signature

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Date

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## **ABSTRACT**

The first objective of the study was to explore whether a correlation exists between anxiety symptoms and stressful life events within a sample of marginalised South African youths. The second objective was to examine the psychometric properties and cross-cultural validation of the Dominic-R when administered within the aforementioned sample.

The participants consisted of a sample of 185 children aged between 10- and 15- years. Children completed three self-report questionnaires, namely the Dominic-R, the Spence Children's Anxiety Scale (SCAS), and a modified version of the Major Life Events Checklist (MLEC-M).

Results indicated that albeit rather weak, significant positive correlations were nonetheless obtained between the total Dominic-R and SCAS scores, and stressful life events experienced. Furthermore, the psychometric properties of both the Dominic-R and the SCAS were moderate (convergent validity) to acceptable (internal consistency) for the sample.

The implications of these results provide tentative evidence for the utilisation of the Dominic-R within South African samples. The limitations and recommendations for future research are discussed

## OPSOMMING

Die eerste doelwit van die studie was om vas te stel of daar 'n korrelasie bestaan tussen angssimptome en stresvolle lewensgebeure binne 'n steekproef van gemarginaliseerde Suid-Afrikaanse jeugdiges. Die tweede was om ondersoek in te stel na die psigometriese eienskappe en kruiskulturele validering van die Dominic-R soos toegepas op voorafgenoemde steekproef.

Die deelnemers het bestaan uit 'n steekproef van 185 kinders tussen 10 en 15 jaar oud. Die kinders moes drie selfverslagvraelyste invul, naamlik die Dominic-R, die Spence-kinderangsskaal (*Spence Children's Anxiety Scale* – SCAS) en die aangepaste weergawe van die Kontrolelys vir Belangrike Lewensgebeure (*Major Life Events Checklist* – MLEC-M).

Alhoewel redelik swak, het resultate tog getoon dat daar 'n beduidend positiewe korrelasie was tussen die algehele Dominic-R- en SCAS-tellings. Verder was die psigometriese eienskappe van beide die Dominic-R en die SCAS gemiddeld (konvergente geldigheid) tot aanvaarbaar (interne konsekwenheid) vir die steekproef.

Hierdie resultate bewys tentatief dat die Dominic-R bruikbaar is binne Suid-Afrikaanse steekproewe. Die beperkings van die studie en aanbevelings vir verdere navorsing word bespreek.

## **ACKNOWLEDGEMENTS**

This thesis would not exist if it were not for the outstanding intellectual guidance, enthusiasm and emotional support by my supervisor Dr Helene Loxton. Thank you!

To Marianna Le Roux for always being available to help whenever I had a question or enquiry.

To Prof Leslie Swartz for making departmental research funds available to me.

To Prof Peter Muris of Rotterdam University, the Netherlands, and Prof Thomas Ollendick of Virginia West University, United States of America for their invaluable academic assistance and expertise, and for guiding me in the right direction.

To the principals of the schools for accommodating me during the duration of the data collection.

To the enthusiastic learners for being so willing to participate.

To Georgia and Dylan for giving up their time to assist me during the data collection phase.

To my invaluable friends for their patience, wonderful sense of humours and for making the writing process less anxiety provoking.

To my sisters Robyn, Megan and Donne' for their friendship, loyalty and support.

To my parents for standing by me in every way possible, not only during the completion of this degree, but throughout my entire life.

Finally, to Nathan for being my 'constant' – you mean the world to me 😊

## **DEDICATION**

This thesis is dedicated to my father Kevin and my mother Bridget for emphasising the importance of an education and more so for making the sacrifices that allowed me to be educated.

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## CHAPTER 1

### INTRODUCTION, MOTIVATION FOR AND AIMS OF THE STUDY

The following chapter consists of a general introduction to anxiety symptoms and stressful life events research in children, as well as a statement of the research problem. The rationale for the present study and the study objectives are thereafter outlined.

#### 1.1 General introduction and statement of the research problem

The high prevalence rates of anxiety have in the last 15 years evoked an upsurge in both exploratory and explanatory research worldwide (Barrett & Turner, 2004; Schniering, Hudson & Rapee, 2000; Weems, 2005). According to Donovan and Spence (2000), anxiety disorders are one of the most common mental health problems in young people. While normal fear can be defined as a response to an actual or imaginary threat that disappears once the threat is removed, abnormal anxiety in contrast, involves feelings of apprehension and lack of control over events that might be threatening (Sadock & Sadock, 2003).

Experiencing fear is a common occurrence in children, and forms an important and integral part in a child's emotional development (Gullone, 2000; Gullone & King, 1997). A problem exists however when fears and anxieties become abnormally excessive that they interfere significantly in a child's everyday functioning and as a result a diagnosis of a clinical anxiety disorder, as defined by the American Psychiatric Association (2000) in the *Diagnostic and statistical manual of mental disorders* (4<sup>th</sup> ed., text revision) (*DSM-IV-TR*), is warranted (Mash & Wolfe, 2005; Muris, Merckelbach, Mayer & Prins, 2000).

The relationship between child psychopathology and stressful life events seems to be robust. Previous research has indicated that the expression of anxiety symptoms, particularly during childhood, is notably influenced by stressful life experiences (Donovan & Spence, 2000; Flannery, 1986; Grant, Compas, Thurm, McMahon & Gipson, 2004; Johnson, 1986; Johnson & McCutcheon, 1980; Tiet et al., 2001). In explanation, it has been proposed that certain risk factors, namely, adverse living conditions and poverty, influence the types and severity of stressful life events experienced by individuals, and that this results in the development of childhood anxiety symptoms (Donovan & Spence, 2000).

The debilitating effects that abnormal anxiety can have on a child's daily functioning have been well documented (Donovan & Spence, 2000; Mash & Wolfe, 2005). Research pertaining to anxiety symptomatology and the possible influence of stressful life events on the expression of these symptoms is thus paramount in ensuring the well being of our youth. Additionally, this will allow for the more effective implementation of intervention programs aimed at treating and/or preventing anxiety symptoms in, particularly, marginalised South African children (Barrett & Turner, 2004; Donovan & Spence, 2000; Loxton, 2004).

The motivation for the current study stems from the need to assess the experience of stressful life events and the development of childhood anxiety within particularly marginalised South African communities. An examination of these variables, namely anxiety symptoms and stressful life events, will allow for a more meaningful understanding of the differences and/or similarities found between these marginalised communities specifically to be obtained.



## **1.2 Motivation for the study**

Previous South African research has emphasised the high prevalence of childhood anxiety, particularly amongst children from marginalised communities (Burkhardt, Loxton, & Muris, 2003; Muris et al., 2006; Muris, Schmidt, Engelbrecht, & Perold, 2002). Furthermore, this research has shown that children from these communities (predominantly black and coloured individuals) display increased levels of anxiety than those from communities of higher socio-economic status (predominantly white individuals) (Muris et al., 2006; Muris, Schmidt et al., 2002).

While research into the reasons why black and coloured children display higher levels of anxiety when compared to their white peers has yet to be undertaken (Muris, Schmidt et al., 2002), one cannot ignore the emotional and behavioural impact that growing up in marginalised communities has on a child's general well being (Donovan & Spence, 2000). As a vast sum of today's youths (10– to 15- years old) were born near to, or after, the official end of the apartheid regime (post 1994), their disadvantaged upbringing during the transition between the Apartheid era and the democratic 'new' South Africa (De La Rey, Duncan, Shefer, & van Niekerk, 1997) may have contributed to their increased stressful and unfavourable daily living conditions (Donovan & Spence, 2000; Muris, Schmidt et al., 2002) and their perceived ability to cope with these difficult situations (Muris, Hoeve, Meesters & Mayer, 2004).

Furthermore, while it has been indicated that poverty and unfavourable living conditions have an influence on the types and severity of stressful life events experienced (Donovan & Spence, 2000) and that a significant relationship between stressful life events and the expression of anxiety symptoms exists (Donovan & Spence, 2000; Flannery, 1986; Johnson, 1986; Johnson & McCutcheon, 1980; Tiet et al., 2001), it follows then that South African research should aim at

gaining a clearer understanding of the possible variables that mediate the onset of anxiety symptoms within marginalised communities, as this will allow for the more effective implementation of anxiety intervention programs that are lacking within these communities (Loxton, 2004).

Finally, whilst South African research has emphasised the high prevalence of childhood anxiety, particularly in marginalised communities (Muris et al., 2006; Muris, Schmidt et al., 2002), appropriate child-friendly measuring instruments within the multi-cultural and multi-lingual society of South Africa, are lacking (Kanjee, 2001). In explanation, it is crucial that the influence of cultural factors on test administration is taken into account so as to ensure sensitivity towards issues of fairness in testing (Foxcroft, 1997; Venter, 2000).

The Spence Children's Anxiety Scale (SCAS; Spence, 1997) and the Dominic-R (Valla, Bergeron & Smolla, 2000) (a child-friendly measuring instrument consisting of pictorial cues to elicit children's responses with regards to anxiety related items), are both internationally recognised self-report questionnaires for measuring DSM-IV anxiety disorder symptoms in children. While the SCAS has previously been employed within the South African context (Muris et al., 2006; Muris, Schmidt et al., 2002), the psychometric properties of the Dominic-R do not exist for a South African sample.

### 1.3 Study aims

The **primary aims** of the study are:

- To determine whether a correlation between anxiety symptoms and stressful life events exists within a sample of marginalised South African children.
- To explore whether the Dominic-R, as compared to The Spence Children's Anxiety Scale (Spence, 1997) - for which South African psychometric evidence already exists (Muris, Schmidt et al., 2002), can be used as an effective anxiety-measuring tool within, specifically, the South African context.

The **secondary aim** of the study includes:

- Examining the similarities and/or differences that exist in terms of anxiety symptoms and stressful life events experienced, with regards to age and gender.

### 1.5 Chapter summary

Chapter one provided a general introduction and statement of the research problem as well as the motivation for the current study. Thereafter the study objectives were outlined.

## **CHAPTER 2**

### **LITERATURE REVIEW**

Chapter 2 begins with defining the relevant key concepts that pertain to childhood anxiety as well as to stressful life events. A concise review of the developmental literature pertaining to these variables then follows. Issues relating to the development and classification of childhood anxiety, as well as its prevalence, aetiology and risk factors are discussed. The psychosocial impairments associated with anxiety are addressed, as well as its relationship with stressful life events. Lastly, an overview of the childhood anxiety assessment instruments is given.

#### **2.1 Key concepts**

##### **2.1.1 Defining middle childhood and early adolescence**

According to Newman and Newman (2003), middle childhood children can be conceptualised as those children falling between the ages of 6- and 12- years. This developmental period constitutes an extremely important phase in terms of children's physical, cognitive, and social development (Wait, 2004). It is during this developmental phase that children become familiar with their social and work ethic values, and their moral behaviour (Wait, 2004). The developmental tasks faced by middle childhood children include the following: concrete operations, friendship, team play, as well as self-evaluation (Newman & Newman, 2003).

Early adolescence on the other hand, pertains to children that fall between the ages of 13- and 18- years (Newman & Newman, 2003). The developmental tasks faced by individuals in their early adolescence include the following: accepting changes in physical appearance; the development of

formal operational thought and emotions; peer group membership; and the establishment of heterosexual relationships (Meyer, 2004).

With regards to the present study, the target age group constituted a normative sample of youths between the ages of 10- and 15- years. The sample thus included children falling within the middle childhood and early adolescence developmental phases as differentiated by Newman and Newman (2003). Specifically, 105 (56.8%) participants fell into the middle childhood phase, with 80 (43.2%) participants in the early adolescence phase. Furthermore, these youths were in Grades 5-, 6-, or 7- with regards to South Africa's levels of formal schooling.

### **2.1.2 Contextualising marginalised South African youths**

According to De La Rey et al. (1997), many black and coloured South African youths have been denied the opportunity to progress with regards to their cognitive and psychosocial development, specifically in marginalised communities. This is in part due to the Apartheid system that formed an integral and highly influential part of South Africa's political history. Under the apartheid regime (pre-1994) black and coloured children, as opposed to white children, were never recognised as being in need of nurturing and protection by the state, and thus very little efforts were directed at them in terms of welfare services (De La Rey et al., 1997). Additionally, many of these children grew up in impoverished communities, thus their daily living resources were seldom met. Children's emotional development and personal self-concepts were thus hindered as a result of poverty, malnutrition and adverse living conditions (De La Rey et al., 1997).

Today (post-1994), regardless that the physical structures of Apartheid have been dismantled, many social structures, like low socio-economic status, are still present within many South

African communities. Thus, many of these children are still negatively impacted by the legacies of Apartheid, which has played a fundamental role in their disadvantaged upbringing.

To highlight, Dawes, Long, Alexander and Ward (2006) conducted a situational analysis in the Western Cape of children affected by maltreatment and violence. Their report focused on the following central areas: child maltreatment such as abuse and neglect; the worst forms of child labour (specifically child trafficking and commercial sexual exploitation); as well as children affected by violence (domestic, school, and community violence). The key findings of the report highlighted the importance of understanding the factors that are associated with each problem so as to ensure the effective monitoring of intervention programs that are subsequently implemented (Dawes et al., 2006).

To conclude, the present study was conducted within the region of Stellenbosch, a semi-rural town situated in the Western Cape, one of the nine provinces in South Africa. More specifically, the sample was recruited from two marginalised coloured and black<sup>1</sup> neighbourhoods in the greater Stellenbosch area. It must be noted that residents from these area's are generally of the lower-income range. It can thus be stated that participants in these schools were from economically disadvantaged communities.

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<sup>1</sup> The use of the terms 'black' and 'coloured' is controversial. These terms are used descriptively for the sole purpose of acknowledging differences between communities that continue to exist as a result of South Africa's political history.

### **2.1.3 Childhood anxiety**

#### **2.1.3.1 Definition**

Fonseca and Perrin (2001, p. 127) define anxiety as, “a set of emotional reactions arising from the anticipation of a real or imagined threat to the self”. Anxiety is thus comprised of two key features, namely a strong negative emotion, and an element of fear.

As previously highlighted, experiencing fear is a normal and common occurrence in children, and forms an important and integral part in a child’s emotional development (Gullone, 2000; Gullone & King, 1997). When a child is diagnosed with an anxiety disorder however, they are said to be experiencing excessive and debilitating fears and anxieties (Mash & Wolfe, 2005; Sadock & Sadock, 2003) that can occur in many different forms such as agoraphobia, social phobia, separation anxiety disorder, obsessive-compulsive problems, generalised anxiety, and physical fears (Spence, Barrett & Turner, 2003; Spence, 1997, 1998).

#### **2.1.3.2 Assessment**

The psychological literature emphasises the importance of using childhood anxiety assessment measures that are both valid and reliable (Schniering et al., 2000). Literature indicates that the assessment measures frequently used include structured diagnostic interviews, which provide data that is easily quantifiable, and which assists in making a formal diagnosis based on the classification system of the DSM-IV-TR; and self-report measures that provide normative data, and are helpful in assessing treatment outcome (Schniering et al., 2000). Previous research has indicated that self-report measures, in addition to being quick and easy to administer, can reliably assess anxiety symptomatology in children (Schniering et al., 2000). Furthermore, it has been reported that self-report measures are able to distinguish between anxious children and their anxious free peers (Schniering et al., 2000).

For the purposes of the present study, children with tendencies toward DSM-defined anxiety disorder symptoms were identified by administering a pictorial measure, namely the Dominic-R (Valla et al., 2000). According to Valla et al. (2000) the Dominic-R has been found to be a child friendly, highly interactive anxiety measuring tool that effectively taps into the classification of anxiety disorders as listed by the *DSM-IV-TR* (2000). Due to the pilot nature however of the administration of the Dominic within a South African sample, the Spence Children's Anxiety Scale (SCAS; Spence, 1997) was additionally administered for the purposes of ensuring the Dominic-R's convergent validity.

That said, the terms 'anxiety symptoms' and 'anxiety disorder symptoms' that are herein referred to in the text will be synonymous with that of 'DSM-defined anxiety disorder symptoms'.

#### **2.1.4 Stressful life events**

According to Gersten, Langer, Eisenberg and Orzeck (1974) a stressor/stressful event is defined as something that is experienced as undesirable or threatening for an individual. As highlighted by Johnson (1982) children encounter a wide range of events that often result in significant changes in their lives if they are unable to cope with and adapt to the stressful situation. Stress therefore typically involves the endangerment of the well-being of an individual (Gersten et al., 1974). When investigating life events, the importance of ascertaining what exactly constitutes that event as being stressful, must not be underestimated (Gersten et al., 1974; Grant et al., 2003). It has been documented that the key component of what makes a life event stressful is conceptualised as its ability to change an individual's usual activities (Gersten et al., 1974).



Stressful events have been found to correlate significantly with psychological, behavioural, and somatic problems (Compas, 1987). Furthermore, these problems occupy a central role in the development of childhood psychopathology (Grant et al., 2004). Also, it has been found that stressful events have implications for academic adjustment (Pungello, Kupersmidt, Patterson & Burchinal, 1996). It must be noted, however, that life events are experienced differently, and thus their intensity cannot be universally generalised (Compas, 1987). Furthermore, the existence of a stressful life event is not always indicative of a disorder, but depends rather on the coping resources of an individual, and his/her ability to effectively deal with the stressor (Compas, 1987).

Self-report checklists are the most widely used method for assessing life events/stressors that affect children and adolescents (Dohrenwend, 2006; Grant et al., 2004). Reasons for this include their easy administration and that they allow for the collection of data in large samples (Grant et al., 2004). Research on stress in children and adolescents however, lags behind that of similar research in adults (Grant et al., 2003), thus little attention has been paid to the psychometric properties of checklists that assess children's life events, as compared to adult checklists (Grant et al., 2004).

For the purposes of the present study, a modified version of the Life Events Checklist (Johnson & McCutcheon, 1980) namely, **The Major Life Events Checklist – Modified (MLEC-M)** was therefore used to measure stressful life events in South African youths. Items in the questionnaire pertain to a broad range of possible positive and negative events as experienced by an individual in their everyday life, and include examples such as: “moving to a new school”, “parents got divorced”, “new baby brother or sister”, to name a few (Johnson, 1986). With regards to the present study, since it has previously been proposed that only stressful life events (those

experienced as being negative) are correlated with the expression of anxiety symptomatology, only those events reported as being negative by the respondent were incorporated (Compas, 1987; Donovan & Spence, 2000; Gersten et al., 1974; Johnson, 1982).

## **2.2 Review of the relevant childhood anxiety literature**

### **2.2.1 Anxiety defined**

As already mentioned, Fonseca and Perrin (2001, p. 127) define anxiety as, “a set of emotional reactions arising from the anticipation of a real or imagined threat to the self”. Examples of words used to refer to the same phenomenon include fears, worries or phobias (Fonseca & Perrin, 2001). While little has been published on the phenomenology of childhood anxiety (Keller et al., 1992), the tripartite model of anxiety organises anxiety reactions around three main components namely, a motor (anxiety characterised by avoidant and restless behaviours), cognitive/subjective (anxiety is characterised by fears, worries or distorted thoughts about one’s performance or safety), and physiological (anxiety is characterised by an increase in autonomic arousal) response respectively (Fonseca & Perrin, 2001). It is upon this tripartite model of anxiety that the DSM-IV anxiety disorders are organised (Fonseca & Perrin, 2001).

### **2.2.2 Developmental pathways**

Many researchers have adopted Rachman’s three-pathways-to-fear model (Ollendick & King, 1991), which explains the development of fears and anxieties in children as either a consequence of an aversive conditioning experience (Lissek et al., 2004; Muris, Merckelbach, de Jong & Ollendick, 2002), exposure to negative information (Field, Argyris & Knowles, 2001), or modelling (where anxious behaviours are cultivated by imitating a significant other)(Gerull & Rapee, 2002; Muris & Merckelbach, 1998; Wood, McLeod, Sigman, Hwang & Chu, 2003).

As previously stated; fear, worry, and anxiety are experienced by all children, and constitute a part of a child’s normal emotional development (Gullone, 2000; Schniering et al., 2000; Vasey & Dadds, 2001). However, many children suffer from clinically significant symptoms that are excessive and result in severe and debilitating consequences for the child’s mental health

(Fonseca & Perrin, 2001; Mash & Wolfe, 2005). Furthermore, pathological anxiety (as opposed to ‘normal’ anxiety) is associated with a marked increase in impairment on a child’s daily functioning (Fonseca & Perrin, 2001).

### **2.2.3 DSM-IV classification**

A problem persists in anxiety disorder research in that the importance of being able to distinguish between what constitutes an anxiety disorder and that of normal anxiety is often underestimated (Bernstein, Borchardt & Perwein, 1996). According to the categorical approach of disorder definition, an anxiety disorder is classified and defined by means of symptom clusters, whereby a marked difference exists between children presenting with an anxiety disorder and those that do not (Fonseca & Perrin, 2001; Spence, 1997). It is thus possible to reliably distinguish between children with anxiety disorders, from those without anxiety psychopathology.

According to Fonseca and Perrin (2001), separation anxiety disorder remains the only anxiety disorder specific to children and adolescents with the remaining anxiety disorders, namely panic disorder, agoraphobia, specific and social phobia, obsessive-compulsive disorder, post-traumatic stress disorder, acute stress disorder, generalised anxiety disorder, anxiety disorder due to a general medical condition, substance induced anxiety disorder and anxiety disorder not otherwise specified, been listed in the adult section and applied to children and adolescents when applicable.

### **2.2.4 Prevalence**

According to Sadock and Sadock (2003) childhood anxiety disorders have a 12-month prevalence rate of approximately 12%. While a dearth existed in the psychological literature pertaining to the prevalence of anxiety disorders in children and adolescents before the mid 1980’s (Keller et al.,

1992; Vasey & Dadds, 2001), since then anxiety disorders have consistently being identified as the most common mental health problems in children and adolescents (Bernstein & Borchardt, 1991; Cartwright-Hatton, McNicol & Doubleday, 2006; Costello et al., 1988; Essau, Conradt, & Petermann, 2000; Kashani & Orvaschel, 1988).

Costello et al. (1988) conducted one of the first studies that looked at the prevalence of a wide range of psychiatric disorders in American children. Their results indicated that 4.1% of the sample of 7- to 11- year old children indicated a one-year prevalence of separation anxiety disorder, and 1% of social phobia (Costello et al., 1988). According to Mash and Wolfe (2005) as much as 10% of all children suffer from separation anxiety disorder (SAD). The results of the Kashani and Orvaschel (1988) study, where the 6-month prevalence of anxiety disorders in a normative sample of adolescents (14- to 16- years old) was reported, revealed slightly higher results. Their results showed that 8.7% of the sample was identified as meeting the criteria to warrant the diagnosis of a clinical anxiety disorder according to DSM criteria (Kashani & Orvaschel, 1988). Bernstein, Garfinkel and Hoberman (1989) found the prevalence of self-reported anxiety in an adolescent sample to be 6%. When assessing the lifetime psychiatric histories of children, Keller et al. (1992) found that 14% of the sample had a history of an anxiety disorder.

Upon examination of the prevalence of anxiety in a group of 7- to 13- year old learners in the Western Cape, it was found that a high percentage of the sample reported serious anxiety symptoms (Perold, 2002). More specifically, the results indicated that between 22% and 25.6% of the participants presented with significant anxiety symptoms (Perold, 2002).

However, despite the high prevalence rates of reported anxiety symptoms, many anxiety disorders go unnoticed, and hence go untreated (Barrett & Turner, 2004; Loxton, 2004; Vasey & Dadds, 2001).

### **2.2.5 Aetiology and risk factors**

Donovan and Spence (2000) highlighted that childhood anxiety disorders involve a complex interaction between biological, environmental, and/or psychological variables that predict the onset, severity, and duration of childhood psychopathology. Implicated risk factors for childhood anxiety related problems includes the following: child temperament style of behavioural inhibition, quality of attachments, stressful life events, as well as parenting style characteristics (Donovan & Spence, 2000).

Temperament has been known to implicate the onset of anxiety disorder symptoms in both boys and girls (Bernstein et al., 1996; Rapee, 2000). Behavioural inhibition pertains to the “tendency to be unusually shy or to show fear and withdrawal in novel and/or unfamiliar situations” (Bernstein et al., 1996, p.1111). In their study on anxiety disorders in children and adolescents, it was shown that confident 5-year-old boys are less likely to report future symptoms of anxiety than passive, shy and fearful 5-year-old girls (Bernstein et al., 1996). According to Biederman et al. (1993) children with this temperamental characteristic are at an increased risk to the development of a future anxiety disorder.

In their study on the relationship between personality traits and psychopathological symptoms in non-clinical adolescents, Muris, Winands and Horselenberg (2003) found that neuroticism correlated significantly with anxiety disorder symptoms within a sample of 12- to 17- year old adolescents. Furthermore, their results concluded that neuroticism appeared to be a stable

predictor of these anxiety symptoms for both genders (Muris et al., 2003). These results were supported by the findings of Muris, de Jong and Engelen's (2004) study on the relationships between neuroticism, attentional control, and anxiety disorders symptoms in non-clinical children. Their results showed a positive correlation between neuroticism and anxiety symptoms (Muris, de Jong et al., 2004).

With regards to mother-child attachment patterns, insecure attachment in preschool children has been found to be a possible risk factor for childhood anxiety disorder development (Bernstein et al., 1996). However, protective factors are present that assist in maintaining secure mother-child attachments (Bernstein et al., 1996).

It has been shown that anxious rearing, and control and rejection, are significantly positively correlated with anxiety symptoms (Muris & Merckelbach, 1998). These results pertained especially to symptoms of generalised anxiety disorder, and separation anxiety disorder (Muris & Merckelbach, 1998). Additionally, the South African research by Muris et al. (2006) highlighted how anxious rearing, overprotection, and rejection by parents significantly influenced the development and expression of anxiety symptoms in children. Furthermore, the youths from communities of high socio-economic status generally reported their parent's rearing behaviours as 'less anxious, overprotective, and rejective, but more emotionally warm' than children from communities of low socio-economic status (Muris et al., 2006, p. 883).

Another variable that has been implicated in the onset of childhood anxiety disorders is stress (Johnson, 1986). As a child develops, he/she is faced with numerous tasks and challenges that require adaptive responses from him/her (Wait, 2004). These may contribute significantly to the

everyday stress experienced by the child, and his/her ability to cope effectively with them (Johnson, 1986).

Wertlieb, Weigel and Feldstein (1987) concluded in their results that a highly significant positive relationship between stress and behaviour symptoms exists. More specifically, their results indicated that undesirable life events were most strongly associated with behaviour problems (Wertlieb et al., 1987). Furthermore, it has been found that stressful life events are strongly associated with anxiety and depressive symptomatology (Flannery, 1986). Results of Flannery's (1986) study conclude that this correlation may be due to age, education, and/or coping capabilities of the individual. Adverse socio-cultural factors, for example low socioeconomic status, have also been implicated in the onset of childhood anxiety (Donovan & Spence, 2000).

#### **2.2.6 Psychosocial impairment associations**

Early documentations of the psychosocial impairment associated with childhood anxiety indicate that anxious children tend to display a broad range of psychosocial difficulties relative to their non-anxious peers (Strauss, Frame & Forehand, 1987), which usually occurs during the worst episode of the disorder (Essau et al., 2000). These include: difficulties in relationships with peers, depression, self-esteem, school performance, and social behaviour (Strauss et al., 1987). Furthermore, anxious children are generally more socially withdrawn and shy (Strauss et al., 1987). If left untreated, childhood anxiety disorders can eventually lead to chronic anxiety, depression, and substance abuse (Kendall, Safford, Flannery-Schroeder & Webb, 2004).

It has been found that high levels of anxiety are accompanied by higher probability judgments of future negative events (Muris & van der Heiden, 2006). In their study in a non-clinical sample of children aged between 10- and 13- years, Muris and van der Heiden (2006) found that highly



anxious children tended to estimate future negative events as far more likely to occur to them, than their low-anxious peers.

### **2.2.7 Assessment methods and instruments**

Adequate assessment of anxiety in children is critical when conducting research (Schniering et al., 2000). When assessing for anxiety disorders in children, it is important to emphasise the following: information pertaining to the onset, development, and context of the anxiety symptoms, including other details such as the child's medical, school, and social history, and a family psychiatric history (Bernstein et al., 1996). Structured psychiatric interviews, clinician rating scales, self-report instruments, and parent report measures are available for the assessment of childhood anxiety (Fonseca & Perrin, 2001). Due to the subjective nature of anxiety symptoms it is highly useful to include more than one type of instrument (Bernstein et al., 1996; Fonseca & Perrin, 2001).

According to Fonseca and Perrin (2001) the unstructured clinical interview is the most commonly reported method used for assessing childhood anxiety. Advantages of this method include high flexibility on matters discussed, as well as an observation of family interactions and their influence on a child's problems (Fonseca & Perrin, 2001). Problems associated with this method, however, include discrepancies in informant responses resulting in disagreements with regards to the nature and meaning of the same behaviour (Fonseca & Perrin, 2001).

In addition, standardised self-report measures such as questionnaires or rating scales feature rather prominently in the assessment of childhood anxiety (Fonseca & Perrin, 2001). These measures are important in terms of obtaining information about specifically children's cognitions, feelings and perceptions with regards to anxiety symptoms (Fonseca & Perrin, 2001).

Furthermore, advantages of utilising these self-report measures include their time effectiveness (as they can be administered within group settings), flexibility, and cost-efficiency (Fonseca & Perrin, 2001; Schniering et al., 2000). In addition, self-report measures provide extremely useful normative data (Schniering et al., 2000). As a result of these aforementioned attributes, self-report measures are extremely useful as anxiety screening instruments (Fonseca & Perrin, 2001).

An example of a self-report instrument designed to assess children's anxieties and fears, includes The Revised Fear Survey Schedule for Children (FSSC-R; Ollendick, 1983), which consists of 80 items rated on a 3-point scale (none, some and much). The most frequently used and researched measure of childhood anxiety is The Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978), which consists of 32 items whereby respondents respond in a yes/no format.

Recent efforts have been aimed at developing self-report measures that assess anxiety symptoms as defined specifically by DSM-IV criteria (Fonseca & Perrin, 2001). The Spence Children's Anxiety Scale (SCAS; Spence, 1997) was developed specifically for this purpose, and consists of 38 items rated on a 4-point scale (0 = *Never* to 3 = *Always*). Spence (1997) concluded that the SCAS could adequately distinguish between clinically anxious children and non-anxious controls.

Kendall and Ollendick (2004) highlight the importance of ensuring the psychometric soundness of anxiety assessment procedures, for example self-report instruments. In explanation, it is important that these measures take into account the contextual factors that may influence the child (Kendall & Ollendick, 2004). The importance of the cross-cultural validation of measuring instruments has been highlighted (Fonseca & Perrin, 2001; Foxcroft, 1997; Venter, 2000). Since

most of the anxiety measures being utilised today were originally developed in English-speaking countries, it is crucial that ethnic and cultural considerations be taken into account when assessing a measure's psychometric viability within a specific sample other than that pertaining to English-speaking individuals (Fonseca & Perrin, 2001). In explanation, research has shown that self-report measures of child anxiety are sensitive to cultural factors (Dong, Yang & Ollendick, 1994; Foxcroft, 1997; Venter, 2000), and as a result it is thus imperative that these factors be taken into consideration during their cultural interpretation thereof (Kendall & Ollendick, 2004).

Upon examination of DSM-defined anxiety symptoms in a normative sample of South African youths specifically, two self-report questionnaires, namely the Spence Children's Anxiety Scale (SCAS; Spence, 1997) and the Screen for Child Anxiety Related Emotional Disorders (SCARED; Birmaher et al., 1999) were used to determine the anxiety symptom scores. Upon investigation of the psychometric properties of these two scales within this sample of South African youths, it was found that both SCAS and SCARED scales were reliable when administered within the sample (Muris, Schmidt et al., 2002). In explanation, Cronbach  $\alpha$  values of 0.92 and 0.90, respectively, for the total SCAS and SCARED scores were obtained (Muris, Schmidt et al., 2002). The study concluded that both the SCAS and SCARED can reliably measure anxiety symptoms within a South African sample (Muris, Schmidt et al., 2002).

In a more recent study that investigated DSM-defined anxiety symptoms amongst black, coloured and white South African children, the SCARED (Birmaher et al., 1999) was again used to assess the expressed anxiety symptoms within the sample. On examination of the psychometric properties of the SCARED, results showed that the scale yielded satisfactory internal consistency ( $\alpha = 0.86$ ) for the total anxiety score for black and coloured youths, as well as for the whole

sample ( $\alpha = 0.90$ ) (Muris et al., 2006). Results of the study concluded that the SCARED can be utilised as a screen for DSM-defined anxiety symptoms in South African children and adolescents (Muris et al., 2006). However, because the psychometric properties of the scale were less convincing within the black and coloured sample of youths, utilisation of the SCARED within these groups specifically should be exercised with caution (Muris et al., 2006).

### **2.2.8 Relationship with stressful life events**

It has been widely documented, particularly in the last 15 years that stressful events play a central role in the development of child and adolescent psychopathology (Flannery, 1986; Grant et al., 2003; Walker & Greene, 1987). In explanation, it has been proposed that certain risk factors, namely, adverse living conditions and poverty, influence the types and severity of stressful life events experienced by individuals, and that this consequently influences the development of childhood anxiety symptoms (Donovan & Spence, 2000; Ollendick, Langley, Jones & Kephart, 2001).

In the study by Tiet et al. (2001) on the relationship between specific adverse life events and psychiatric disorders, it was found that certain psychiatric disorders might be more closely associated with stressful life events than other psychiatric disorders. Furthermore, it was concluded that some stressful life events seem to be related to specific types of disorders (Tiet et al., 2001). For example, children with a conduct disorder are more likely to associate with physically hostile peers, and thus are more likely to witness violence (Tiet et al., 2001). The implication of this finding suggests that specific intervention programs can be aimed at individuals who have experienced particular stressful life events (Tiet et al., 2001).

It has been found that children from marginalised communities experience more stressful life events (Attar, Guerra, & Tolan, 1994). Related to this is the influence that socioeconomic status and ethnicity has on the exposure to these events (Brady & Matthews, 2002). The results of Brady and Matthews' (2002) study suggested that having few assets and being black has additive effects on exposure to stressful life events. These findings highlight the adverse affect that growing up in unfavourable living conditions can have on the quantity of stressful life events experienced by an individual, and thus the possible contribution thereof to the development of an anxiety disorder (Attar et al., 1994).

The results of Gothelf, Aharonovsky, Horesh, Carty and Apter's (2004) study on the relationship between life events and personality factors in children, indicate that the quantity, quality and specificity of life events may be associated with anxiety disorders, especially obsessive compulsive disorder, in children. Furthermore, their study highlighted the influence of stressful life events in the onset of these disorders (Gothelf et al., 2004).

### **2.3 Chapter summary**

Chapter two began by defining and contextualising the key concepts relevant to childhood anxiety and stressful life events, and included the following:

Middle childhood and early adolescence was defined, and these youths were contextualised within the South African context. This included highlighting the effects of Apartheid on childhood development.

Definitions of the constructs childhood anxiety and stressful life events then followed.

Thereafter, a review of the literature relevant to childhood anxiety was presented, which included the following: its developmental pathways, DSM-IV classification, prevalence statistics, aetiology and risk factors, psychosocial impairment associations, assessment methods and instruments, and its relationship with stressful life events.

The subsequent chapter attends to the methodological procedures employed in the present study.

## CHAPTER 3

### RESEARCH METHODOLOGY

Chapter 3 includes a detailed outline and discussion of the methods used to obtain and analyse the data. More specifically, issues pertaining to the research design, sampling methods, as well as an overview of the psychometric properties of the questionnaires used to obtain the data, are discussed. Finally, a meticulous description of the research procedure, as well as a short summary of the data analysis techniques, is provided.

#### **3.1 Research design**

For the purposes of comparing research outcomes, the study was cross-sectional in nature and employed a correlational research design (Graziano & Raulin, 2004). According to Graziano and Raulin (2004) correlational studies allow one to measure the relationship between two variables. The purpose of the present study can therefore be classified as assessing the relationship between reported anxiety symptoms and stressful life events experienced.

That said the research process was divided into three stages, namely permission and administration, data collection, and data analysis. The first stage included gaining ethical approval for the research, which was obtained from the Research Ethics Committee, Faculty of Health Sciences, Stellenbosch University. Permission to conduct the research within schools was obtained from the Western Cape Department of Education as well as from the principals of the schools that were to be included in the sample. Finally, informed written consent to participate in the study was obtained from the recruited participants' parents.

During the second stage of the research process, the data were collected in one setting that was during an appropriate time slot negotiated with the schools. The data were collected quantitatively whereby it was required of the participants to fill out four questionnaires, namely a biographical questionnaire, the Dominic-R (Valla et al., 2000) and The Spence Children's Anxiety Scale (SCAS; Spence, 1997) respectively, and the Major Life Events Checklist – Modified (MLEC-M; Johnson & McCutcheon, 1980), in this order. Furthermore, the questionnaires were administered in both English and Afrikaans, as they were the official languages of instruction within the schools.

Finally, the third stage consisted of data analysis, which was completed using the statistical package for social sciences (SPSS, Field, 2005).

### **3.2 Aims of the study**

To reiterate, the aims of the study were as follows:

The primary aims of the study included:

- Determining whether a correlation between anxiety symptoms and stressful life events exists within a sample of marginalised South African children.
- Exploring whether the Dominic-R, as compared to The Spence Children's Anxiety Scale (Spence, 1997) - for which South African psychometric evidence already exists (Muris, Schmidt et al., 2002), can be used as an effective anxiety-measuring tool within, specifically, the South African context.



The secondary aims of the study included:

- Examining the similarities and/or differences that exist in terms of anxiety symptoms and stressful life events experienced, with regards to age and gender.

### **3.3 Sampling**

Convenience sampling from schools resulted in an ad hoc sample being recruited from two populations of marginalised South African youths (Graziano & Raulin, 2004).

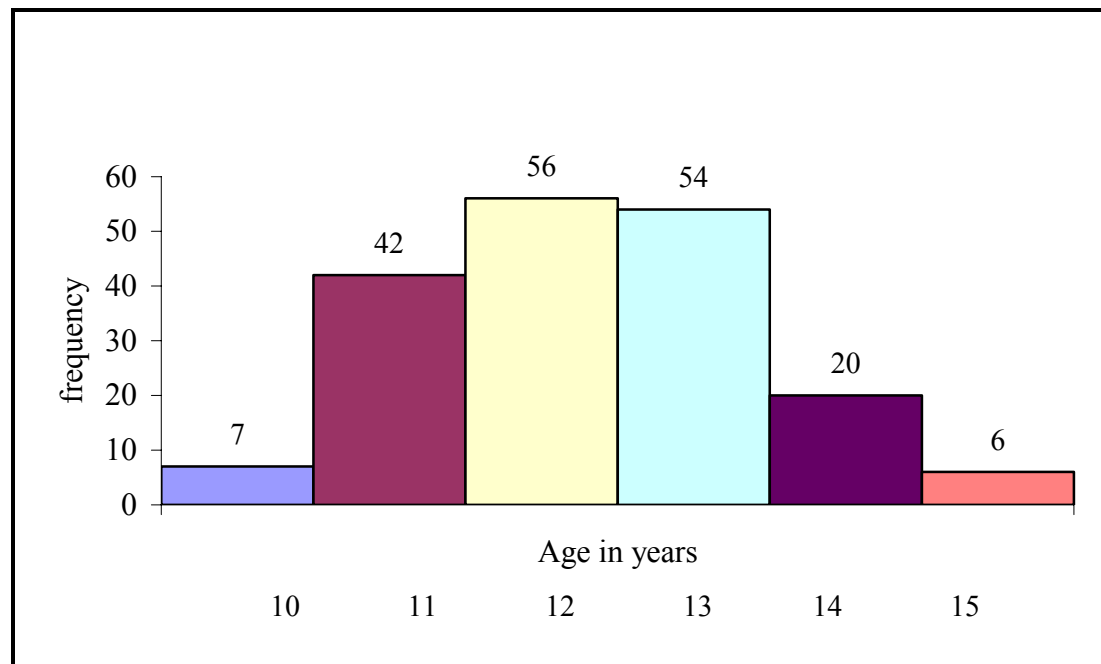
### **3.4 Research participants**

A total number of 757 children were invited to take part in the study. These included all the children in grades<sup>2</sup> 5-, 6-, and 7- attending two regular primary schools at Stellenbosch, South Africa. Thereafter only those children, from whom parental written informed consent was obtained, were included in the study. This included a response rate of approximately 22.4%. A total number of 185 children assented to participate in the research. The biographical data of the 185 participants of the study are depicted in the following figures, which refer to age, gender, and ethnicity.

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<sup>2</sup> The term 'grade' refers to distinct educational levels within South Africa's system of formal schooling

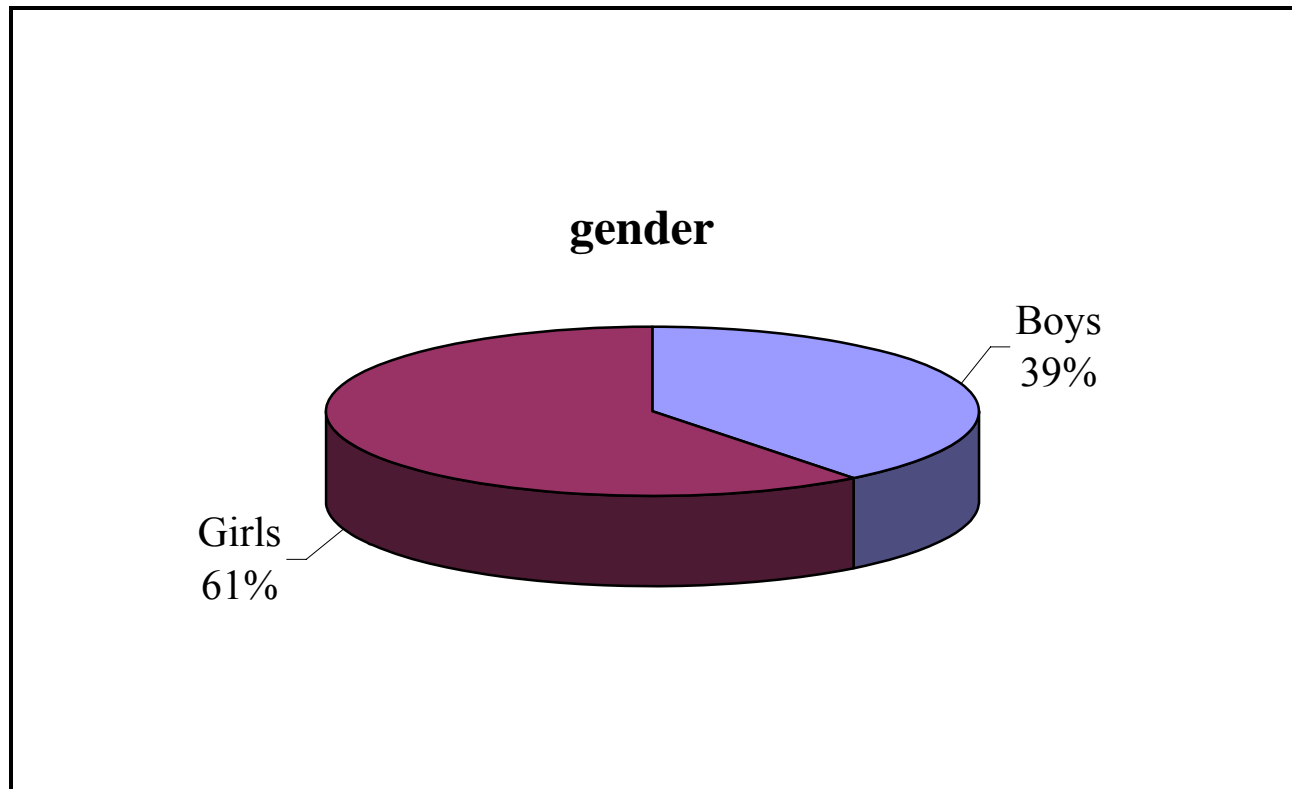
Figure 3.1 depicts the age distribution of the 185 participants.



*Figure 3.1* Age distribution of participants

The participants' ages ranged between 10- and 15- years. The mean age was 12.3 years, with a  $SD = 2.7$  years.

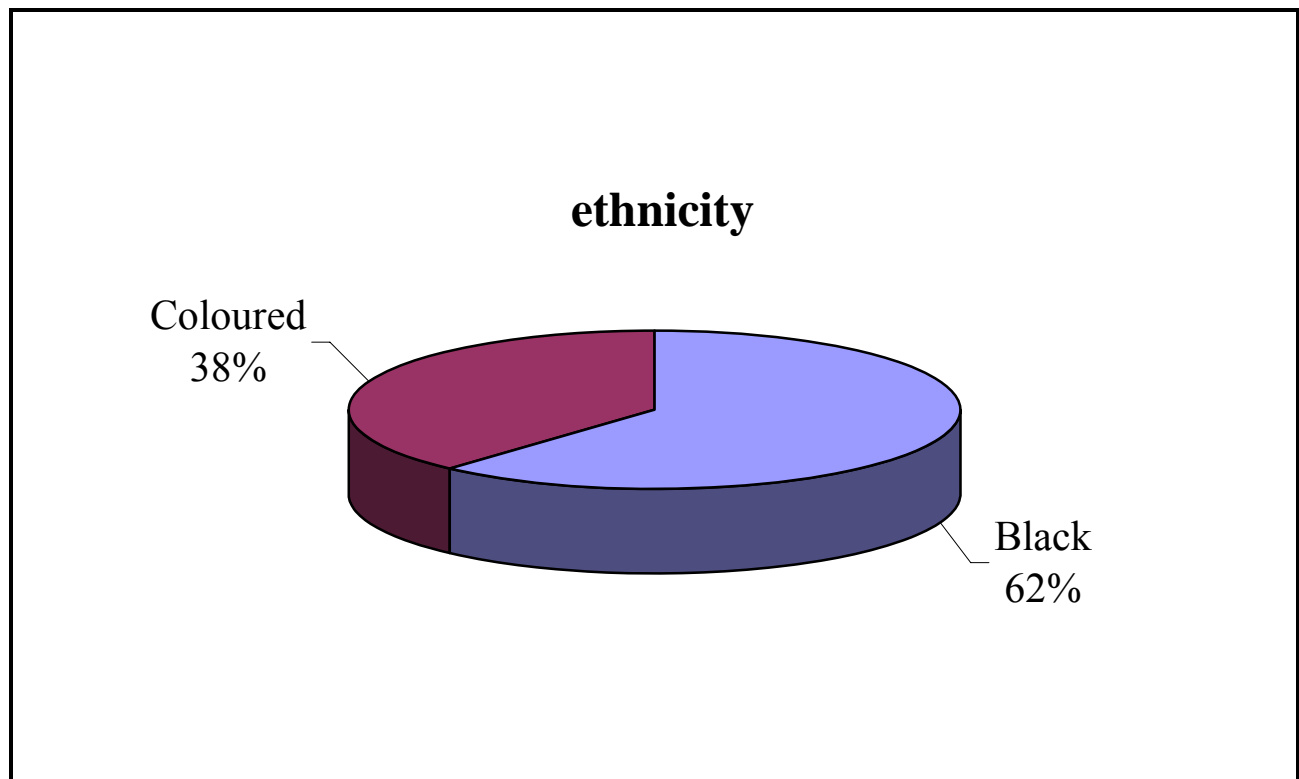
The gender distribution of the 185 participants is shown in Figure 3.2



*Figure 3.2* Gender distribution of participants

The gender distribution of the participants constituted 73 (39.5%) boys and 112 (60.5%) girls. It can therefore be seen that the number of girls clearly out ranked the number of boys.

Lastly, the ethnicity of the 185 participants is depicted in Figure 3.3



*Figure 3.3* Ethnicity of participants

Ethnicity was represented in the following way: 114 (61.6%) black and 71 (38.4%) coloured children participated in the research.

As previously mentioned, the schools are set in two marginalised neighbourhoods, in the greater Stellenbosch area. Residents from these areas (as compared to other areas in Stellenbosch) are generally of the lower-income range (classified by using the guidelines provided by the Department of Sociology of Stellenbosch University). It can thus be said that the participants that participated in the study reside in economically disadvantaged communities.

Furthermore, previous South African exploratory research pertaining to childhood anxiety symptoms has already been conducted within these communities (see Burkhardt et al., 2003; Mostert, 2006; Muris, Schmidt et al., 2002; Muris et al., 2006). As a result, it was decided by the researcher to target those specific populations so as to draw on the relevant findings obtained from them during previous research.

### **3.5 Measuring instruments**

Data pertaining to the participant's age, gender, grade and school was obtained by means of a biographical questionnaire. Thereafter, two self-report anxiety questionnaires, namely the Dominic-R (Valla et al., 2000) and the Spence Children's Anxiety Scale (SCAS; Spence, 1997) were used to assess the participant's anxiety status. Finally, the Major Life Events Checklist – Modified (MLEC-M; Johnson & McCutcheon, 1980) was used to measure stressful life events.

#### **3.5.1 The Dominic-R (Valla et al., 2000)**

The Dominic-R is a self-report, pictorial measure that screens for tendencies toward the most frequent DSM-IV mental health problems in children 6- to 11- years of age (Valla et al., 2000). These include symptoms pertaining to attention deficit-hyperactivity, oppositional, conduct, major depressive, separation anxiety, and generalised anxiety disorders, and specific phobias. The total Dominic-R scale consists of 91 items. As a result of the relevance of items to anxiety

symptomatology however, only those items in the Dominic-R pertaining to anxiety symptoms were used for the purposes of the present study. This included items that pertained specifically to generalised (15 items) and separation (8 items) anxiety respectively, and specific phobias (9 items).

On a one-on-one basis, participants are presented with an answer sheet, and a booklet containing 32 cartoon pictures, depicting a child called Dominic in different daily situations, namely at home, school, and with other children, which pertain to the expression of anxiety symptoms. It must be noted that Dominic (see Addendum G) has been found to be non-gender specific (Valla et al., 2000). According to Valla et al. (2000) these pictures allow for the abstract emotional and behavioural content of DSM-IV symptoms to be illustrated. Specific questions accompany each picture, allowing the interviewer to read them out aloud. These sentences allow for the auditory description of the symptoms, which harmonise the visual stimulus provided by the pictures (Valla et al., 2000). For example: a picture of Dominic-R with an insect on his arm and a shocked/scared/anxious expression on his face will be accompanied by the question, “Are you very scared of insects just like Dominic?” (See addendum G). Thereafter, respondents indicate on an answer sheet provided whether they feel similar to the way that Dominic is feeling. Possible answers include; *Yes* = 1, and *No* = 0. A total Dominic-R score can be obtained by adding the responses (Valla et al., 2000). Thereafter, participants can be identified as being at risk in developing an anxiety disorder if they score above the cut-off point (Valla et al., 2000).

Research from American populations has indicated that the Dominic-R is an effective, child friendly and highly interactive, childhood anxiety-measuring tool (Muris, Meesters, Smulders, & Mayer, 2005; Valla et al., 2002). Furthermore, psychometric properties of the Dominic-R include that it has acceptable reliability with regards to internal consistency and test-retest reliability, and

reasonable validity (Murphy et al., 2000; Valla, Bergeron, Bérubé, Gaudet, & St-Georges, 1994; Valla, Bergeron, Bidaut-Russell, St-Georges, & Gaudet, 1997; Valla et al., 2000). Additionally, it has been found to compare favourably with other child anxiety assessment questionnaires (Valla et al., 1997).

It must be noted that because the Dominic-R has never been administered within a South African sample, information pertaining to its psychometric properties for a South African sample is lacking. Furthermore, with regards to the present study and due to time constraints, the Dominic-R was administered within a group setting as opposed to on a one-on-one basis as highlighted by the literature (Valla et al., 2000).

### **3.5.2 The Spence Children's Anxiety Scale (SCAS; Spence, 1997)**

The SCAS measure is designed to assess, specifically, anxiety in children aged between 8- and 12- years (Spence, 1997; Spence et al., 2003). Consisting of 38 items that assess specific anxiety symptoms relating to six sub-categories, namely social phobia, separation anxiety, panic attack/agoraphobia, obsessive-compulsive disorder, generalised anxiety and physical injury fears, the SCAS can identify children who are at risk for developing an anxiety disorder in the future (Spence et al., 2003). Respondents are asked to indicate the frequency on a four-point scale (ranging from *Never* = 0 to *Always* = 3) with which each symptom occurs, whereby a total SCAS score can be ascertained (Spence et al., 2003).

The clinical cut-off for the SCAS is 42.48 (Spence, 1997; Spence et al., 2003). Thus, participants who score 42.48, or above, can be identified as being at risk in developing an anxiety disorder. In addition, Muris, Schmidt et al. (2002) found that the SCAS can be used as a reliable measure for anxiety within South African samples, as it displays sound psychometric properties (internal

consistency tests produced a alpha coefficient of .92; and a 12-week test-retest reliability coefficient of .63 was obtained).

### **3.5.3 The Major Life Events Checklist – Modified (MLEC-M; Johnson & McCutcheon, 1980)**

The Major Life Events Checklist - Modified is a slight modification of Johnson and McCutcheon's (1980) Life Events Checklist (LEC). In collaboration with a highly influential expert in the field of Child Psychology, the researcher modified certain items for the purposes of making them more applicable to young South African children (Johnson, 1986). An example of these modifications includes the following:

- “You moved to the U.S. to live” was altered to “You moved to SA to live”, and
- “You got a failing grade on your report card” was changed to “You failed a test/exam at school”

The underlying conceptual meaning of the altered items thus did not differ significantly from the original scale by Johnson and McCutcheon (1980) whereby the same construct was still being measured (Foxcroft, 2001). Furthermore these modifications were approved by an expert in the field prior to the administration of the questionnaire thereof.

Items in the MLEC-M relate to possible positive and negative life events experienced by the child during the previous year. From the list, consisting of a total of 50 items, respondents are first asked to indicate whether each event occurred for them. Thereafter, for those events that occurred, respondents indicate whether the event was, or was not, a problem for them (*Not=0*). Subsequently, respondents rate the degree to which only the problematic events were stressful or



unpleasant on a three-point scale (ranging from *A little* = 1, to *A lot* = 3). Five open-ended spaces are additionally included so as to allow respondents to document any other event that may have occurred to them.

As conducted by the original author (Johnson & McCutcheon, 1980), the total number of reported negative life events was used to obtain a life stress score. Additionally, an intensity score was obtained by summing the relative impact of the life events, with average scores being obtained by dividing the event intensity by the total number of events experience. Participants were then given the opportunity to record any additional life events that may have occurred to them in the blank spaces provided at the end of the questionnaire.

Psychometric properties of the LEC include: acceptable validity (Johnson, 1986); with a test-retest reliability for the negative life events of  $r = .72$  being reported (Johnson & McCutcheon, 1980). To the researcher's knowledge, psychometric properties of the LEC do not exist for a South African sample.

### **3.6 Data collection procedures**

The present study's ethical basis was approved by the Research Ethics Committee, Faculty of Health Sciences, Stellenbosch University (see Addenda F). Additionally, permission to conduct the study at local schools within the Stellenbosch area during 2006 was obtained from the Western Cape Department of Education (see Addenda E). Thereafter, a written invitation was sent to the three schools explaining the purpose of the research, what it entailed and the rights of the participants (see Addendum A). Two of the schools agreed to accommodate the researcher. Following this, information letters were sent to the parents/guardians of the children explaining the research and the participant's rights (see Addendum B), asking them to sign the consent form

attached were they to grant permission (see Addendum C). In line with the ethical procedures of the Research Ethics Committee, participants were asked to fill out the assent forms (see Addendum D) prior to the administration of the questionnaires.

Of the children assenting to participate, the biographical questionnaire, the Dominic-R, the SCAS, and the Major Life Events Checklist - Modified were administered in that order. It was decided that the reflection on stressful life events may prime the participants to the anxiety questionnaires, thus the Major Life Events Checklist - Modified was administered last. The participants themselves completed all four questionnaires, which occurred in six group settings (according to participants' grade) during normal school hours, and took approximately 50 minutes.

Permission for the use of the questionnaires was obtained from their respective authors, and furthermore a professional translator translated each from English into Afrikaans. Thereafter, the accurateness of the translations was back-translated by a bilingual registered research psychologist (Kanjee, 2001). Anonymity and confidentiality was explained to the participants, as well as the importance of filling out the questionnaires in an honest manner, prior to their administration thereof. The questionnaires were administered to the participants in both English and Afrikaans, as these are the languages used to receive their formal schooling. In addition, the researcher read each item out aloud to further ensure clarity, and research assistants proficient in English, Afrikaans and isiXhosa were present so as to consolidate any communication barriers that may have existed.

### **3.7 Statistical analyses**

All data were analyzed using The Statistical Package for the Social Sciences (SPSS; Field, 2005). Firstly, a reliability analysis (Cronbach and Guttman splithalf alpha's) was conducted to assess the internal consistency of both the Dominic-R and SCAS. It must be noted that due to MLEC-M's multiple options checklist nature, the internal consistency was not computed for the scale as it was assumed that no inter-item correlations would exist between the items. In explanation, the occurrence of one event does not necessarily imply the occurrence of another event. For example, an indication of "Your parents got divorced" does not necessarily imply that "You failed a test", thus it is not expected that a correlation will exist between the two items.

Thereafter, along with descriptive statistics, the relationship between anxiety disorder symptoms and stressful life events was assessed using Pearson correlation coefficients. An analysis of variance (ANOVA) was additionally utilised to ascertain any similarities and/or differences found for age and gender within the sample.

In terms of the psychometric properties of the Dominic-R, along with a reliability analysis, the differences for age and gender were processed via an ANOVA. For the purposes of examining the Dominic-R's convergent validity, Pearson's correlation coefficients were additionally computed to assess the nature of the relationship between the Dominic-R and the SCAS (Schniering et al., 2000). In explanation, the Dominic-R's convergent validity was examined through the intercorrelation of its scores with the SCAS for which South African psychometric evidence already exists.

Finally, the open ended MLEC-M responses were briefly examined.

### **3.8 Chapter summary**

Chapter 3 addressed the following methodological procedures that were implemented in the present study:

Firstly, for the purposes of assessing the relationship between anxiety symptoms and stressful life events a correlational research design was implemented.

Convenience sampling from schools resulted in 185 children assenting to participate in the research.

The biographical data referring to age, gender, and ethnicity was presented, as well as a short summary of the measuring instruments used. These included the Dominic-R and SCAS to measure self-report anxiety symptoms, and the MLEC-M to assess the stressful life events experienced.

Thereafter, the data collection and statistical analyses procedures were discussed at length. The data were collected in a primarily quantitative manner, and analyzed using the Statistical Package for the Social Sciences. The verbatim responses with regards to stressful life events were additionally explored.

The findings of the present study are addressed in the subsequent chapter.

## CHAPTER 4

### RESULTS

Chapter 4 presents the main findings of the present study. These were obtained by a quantitative data analysis of the anxiety symptom and life event scores. Along with the reporting of the reliability analysis of the questionnaires, this chapter includes descriptive and correlational results for the aforementioned variables. Finally, an outline of the verbatim responses for life events experienced is outlined.

#### 4.1 Demographic characteristics of the sample

To reiterate and for the sake of clarity, a total of 185 children: 73 (39.5%) boys and 112 (60.5%) girls participated in the study. Mean age of the total sample was 12.3 years ( $SD = 1.1$ , range 10-15 years). Participants were predominantly black (61.6%) and coloured (38.4%), and were enrolled in grades 5- ( $n = 74$ , 40%), 6- ( $n = 65$ , 35.1%) and 7- ( $n = 46$ , 24.9%) respectively.

#### 4.2 Reliability analyses of questionnaires

Table 1 highlights the alpha values of the Dominic-R and SCAS total anxiety scores as well as for each of their subscales. According to Field (2005) an alpha value of 0.70 or above indicates sufficient internal consistency.

Table 1

*Internal Consistency of the Dominic-R and SCAS Questionnaires*

	No. of Items	Cronbach $\alpha$	Guttman split-half $\alpha$
<i>Dominic-R</i>			
Total score	32	0.85	0.89
Generalised anxiety	15	0.72	0.77
Separation anxiety	8	0.70	
Specific phobia	9	0.69	
<i>SCAS</i>			
Total score	38	0.91	0.90
Panic/agoraphobia	9	0.77	
Social anxiety	6	0.62	
Separation anxiety	6	0.60	
Generalised anxiety	6	0.70	
Obsessions/compulsions	6	0.69	
Physical injury fears	5	0.50	

*Note: SCAS = Spence Children's Anxiety Scale*

#### 4.2.1 Dominic-R

As can be seen from the table, a Cronbach alpha value for the Dominic-R total score of 0.85 was obtained. Due to the length of the scale (total of 32 items) a Guttman split-half ( $\alpha = 0.89$ ) was additionally computed to verify the accuracy of the scales' internal consistency (Field, 2005; Wolfaardt, 2001).

#### **4.2.2 SCAS**

The internal consistency of the SCAS was slightly higher than that of the Dominic-R with a Cronbach's alpha of 0.91 being obtained for the entire scale. Furthermore due to the scales' length (36 items) a Guttman split-half ( $\alpha = 0.90$ ) was additionally computed. The internal consistency of the entire scale was high and thus acceptable (Huysamen, 1996). Internal consistencies of the SCAS subscales were also acceptable (Spence, 1997; Spence et al., 2003), albeit the 0.62, 0.60, and 0.50 obtained for social anxiety, separation anxiety, and physical injury fears respectively. Consequently, the results obtained for the social anxiety, separation anxiety and physical injury fears subscales should be interpreted with caution.

### **4.3 Anxiety symptoms and stressful life events**

#### **4.3.1 Descriptive statistics**

##### **4.3.1.1 Anxiety symptoms**

In Table 2 the mean scores and standard deviations of the Dominic-R are portrayed.

Table 2

*Mean Scores and Standard Deviations of the Dominic-R*

	Gender	Mean	(SD)
<i>Dominic-R</i>			
Total anxiety score	Boy	14.27	5.8
	Girl	14.54	6.7
	Total	14.43	6.3
Generalised Anxiety	Boy	7.13	2.8
	Girl	6.23	3.5
	Total	6.60	3.3
Separation Anxiety	Boy	3.89	1.9
	Girl	4.34	2.2
	Total	4.15	2.1
Specific phobia	Boy	3.24	2.4
	Girl	3.97	2.1
	Total	3.67	2.3

*Note: Total (N = 110); boys (n = 45) & girls (n = 65)*

It can be seen that the tendency for girls to report elevated levels of anxiety was higher than that of their male counterparts on the total Dominic-R anxiety score as well as for its subscales barring generalised anxiety. A substantial difference however did not exist between these scores.



Furthermore, these differences for gender were not significant as no significant effects on the total Dominic-R score ( $F(1, 108) = 0.05, p > 0.05$ ), and on the generalised anxiety ( $F(1, 108) = 2.05, p > 0.05$ ), separation anxiety ( $F(1, 108) = 1.22, p > 0.05$ ) and specific phobia ( $F(1, 108) = 2.80, p > 0.05$ ) subscales, were obtained.

Table 3 presents the mean scores and standard deviations of the SCAS

Table 3

*Mean Scores and Standard Deviations of the SCAS*

	Gender	Mean	(SD)
Total anxiety score	Boy	40.04	19.1
	Girl	37.31	17.6
	Total	38.43	18.2
Panic/agoraphobia	Boy	8.07	5.2
	Girl	6.42	4.7
	Total	7.09	5.0
Social anxiety	Boy	6.09	3.7
	Girl	5.97	3.5
	Total	6.02	3.6
Separation anxiety	Boy	6.53	3.6
	Girl	6.31	3.9
	Total	6.40	3.8
Generalised anxiety	Boy	6.89	3.8
	Girl	7.06	3.4
	Total	6.99	3.6
Obsessions/compulsions	Boy	7.24	3.9
	Girl	6.25	3.8
	Total	6.65	3.9
Physical injury fears	Boy	5.22	3.2
	Girl	5.31	3.2
	Total	5.27	3.2

*Note: SCAS = Spence Children's Anxiety Scale, Total (N = 110); boys (n = 45) & girls (n = 65)*

It can be seen from Table 3 that the results obtained for the SCAS revealed contradictory findings. In explanation, boys displayed higher levels of anxiety than their female peers on the total SCAS anxiety score, as well as on each of its subscales (barring generalised anxiety and physical injury fears).

These results however were not significant. In explanation, no significant effects for gender on the SCAS total score ( $F(1, 108) = 0.60, p > 0.05$ ), and on the panic/agoraphobia ( $F(1, 108) = 2.92, p > 0.05$ ), social anxiety ( $F(1, 108) = 0.03, p > 0.05$ ), separation anxiety ( $F(1, 108) = 0.09, p > 0.05$ ), generalised anxiety ( $F(1, 108) = 0.05, p > 0.06$ ), obsessions/compulsions ( $F(1, 108) = 1.79, p > 0.05$ ) and physical injury fears ( $F(1, 108) = 0.12, p > 0.05$ ) subscales, were obtained.

#### **4.3.1.2 Stressful life events**

Lastly, Table 4 presents the mean scores and standard deviations of the MLEC-M

Table 4

*Mean Scores and Standard Deviations for the MLEC-M*

	Gender	Mean	(SD)
<i>Life Events</i>			
No. of events	Boy	12.76	7.7
	Girl	14.20	7.2
	Total	13.55	7.4
<i>Intensity</i>			
Intensity	Boy	15.76	15.5
	Girl	21.11	19.0
	Total	18.69	17.6
<i>Intensity/No. of events</i>			
Intensity/No. of events	Boy	1.20	0.6
	Girl	1.40	0.7
	Total	1.30	0.7

*Note: Total (N=64), boys (n=29), girls (n=35)*

As can be seen from Table 4, girls reported a greater number of stressful life events than boys. Additionally, a marked difference in the intensity of events experienced existed between girls and their male counterparts. However, on analysis between the 'intensity/number' of events, a very small difference existed in the results obtained for the girls and boys.

Again, results revealed no significant effects for gender on the total number of stressful life events experienced ( $F(1, 62) = 0.59, p > 0.05$ ), the events intensity ( $F(1, 62) = 1.48, p > 0.05$ ), and event intensity/total number ( $F(1, 62) = 1.38, p > 0.05$ ).

#### 4.3.2 Correlations between anxiety symptoms and stressful life events

Table 5 presents the correlations between anxiety symptoms and stressful life events.

Table 5

*Correlations between Anxiety Symptoms and Stressful Life Events (N = 64)*

	<i>Dominic-R</i>	<i>SCAS</i>
<i>Stressful life events</i>		
Number	0.29*	0.56**
Intensity	0.34**	0.55**
Intensity/number	0.26*	0.36**

\*  $p < .05$ . \*\*  $p < .01$ .

Albeit rather weak, significant positive correlations were nonetheless obtained for the relationship between the total SCAS and Dominic-R scores and stressful life events experienced. A positive correlation between the total SCAS score and the number of stressful life events experienced was the strongest ( $r = 0.56, p < 0.01$ ), with a positive correlation between the total SCAS score and the event intensity following extremely close behind ( $r = 0.55, p < 0.01$ ).

### 4.3.3 Differences for age and gender

No significant relationships were found between age and the number of total events ( $r = -0.13$ ,  $p = 0.316$ ), age and event intensity ( $r = -0.21$ ,  $p = 0.091$ ), and age and intensity/total number ( $r = -0.14$ ,  $p = 0.282$ ). The data thus failed to yield an association between age and stressful life events experienced.

Furthermore, an analysis of variance indicated that there were no significant effects for age on the total number of stressful life events experienced ( $F(5, 58) = 0.54$ ,  $p > 0.05$ ), the intensity of the events experienced ( $F(5, 58) = 0.72$ ,  $p > 0.05$ ), and for intensity/total number ( $F(5, 58) = 1.20$ ,  $p > 0.05$ ).

Similar results were obtained for gender and stressful life events. In explanation, and to repeat, no significant effects for gender on the total number of stressful life events experienced ( $F(1, 62) = 0.59$ ,  $p > 0.05$ ), the events intensity ( $F(1, 62) = 1.48$ ,  $p > 0.05$ ), and event intensity/total number ( $F(1, 62) = 1.38$ ,  $p > 0.05$ ) were obtained.

## 4.4 Psychometric properties of the Dominic-R

The internal consistency of the Dominic-R was ascertained by means of the Cronbach  $\alpha$  and Guttman splithalf  $\alpha$  (see Table 1). Gender differences were assessed via an analysis of variance (ANOVA), and relevant relationships for the purposes of assessing the scales convergent validity were evaluated by means of Pearson correlations.

### 4.4.1 Reliability analysis

As previously mentioned, Table 1 presents the alpha values for the Dominic-R and its subscales. It can be seen that within the sample of South African youths, the internal consistencies of the

Dominic-R total score as well as its subscales were high and thus acceptable (Field, 2005, Huysamen, 1996).

#### **4.4.2 Differences for age and gender**

No significant correlations were found between age and the total Dominic-R score ( $r = -0.07$ ,  $p = 0.463$ ), age and the generalised anxiety subscale ( $r = 0.01$ ,  $p = 0.936$ ), age and the separation anxiety subscale ( $r = -0.12$ ,  $p = 0.213$ ), and age and the specific phobia subscale ( $r = 0.10$ ,  $p = 0.309$ ).

Likewise, an analysis of variance further highlighted that no significant effects for age on the total Dominic-R anxiety score ( $F(5, 104) = 1.34$ ,  $p > 0.05$ ) and its subscales, namely generalised anxiety ( $F(5, 104) = 0.90$ ,  $p > 0.05$ ), separation anxiety ( $F(5, 104)$ ,  $p > 0.05$ ), and specific phobia ( $F(5, 104) = p > 0.05$ ) were obtained.

With regards to gender, and to reiterate, no significant effect for gender was obtained for the Dominic-R anxiety scores. In explanation, no significant effects on the total Dominic-R score ( $F(1, 108) = 0.05$ ,  $p > 0.05$ ), and on the generalised anxiety ( $F(1, 108) = 2.05$ ,  $p > 0.05$ ), separation anxiety ( $F(1, 108) = 1.22$ ,  $p > 0.05$ ) and specific phobia ( $F(1, 108) = 2.80$ ,  $p > 0.05$ ) subscales, were obtained.

#### 4.4.3 Correlations between the Dominic-R and SCAS questionnaires

Table 6 presents the correlations between the Dominic-R and SCAS anxiety scores.

Table 6

*Correlations Between the Dominic-R and SCAS Questionnaires and Subscales (N = 110)*

	<i>Dominic-R</i>			
	Total anxiety score	Generalised anxiety	Separation anxiety	Specific phobia
<i>SCAS</i>				
Total anxiety score	<b>0.64</b>	0.60	0.49	0.47
Panic/agoraphobia	0.58	0.60	0.38	0.40
Social anxiety	0.42	0.46	0.25	0.27
Separation anxiety	0.53	0.43	<b>0.50</b>	0.39
Generalised anxiety	0.46	<b>0.39</b>	0.43	0.33
Obsessions/compulsions	0.49	0.49	0.34	0.34
Physical injury fears	0.52	0.40	0.42	0.48

*Note: SCAS = Spence Children's Anxiety Scale; The numbers in bold pertain to the correlations between the Dominic-R and SCAS scales that are intended to measure the same anxiety symptoms; All correlations are significant at the  $p < 0.01$ .*

A significant positive correlation was obtained between the total Dominic-R and SCAS anxiety scores ( $r = 0.64$ ,  $p < 0.01$ ). Albeit small, the two scales were nonetheless significantly correlated.

When assessing the relationship between the scales' subscales that are supposed to measure symptoms of the same disorder, rather weak positive correlations were obtained. In explanation, a



Pearson's correlation coefficient of 0.39 was obtained for the generalised anxiety subscale, and a coefficient of 0.50 for the separation anxiety subscale respectively.

These results suggest, although rather weakly, that a positive relationship exists between the Dominic-R and the SCAS, and provide tentative evidence for the Dominic-R's convergent validity. Due to this small correlation however, these results should be interpreted with caution.

#### **4.5 Verbatim responses of stressful life events experienced**

Thirty-seven (20%) participants filled out life events in the additional blank spaces provided at the end of the MLEC-M, with a final total of 75 responses (items) being elicited.

Table 7 provides these responses verbatim, which for the purposes of clarification are grouped into categories.

Table 7

*Verbatim Responses of Stressful Life Events Experienced*

Category	Example	No. of Items	%
Physical violence	Your parents beat you in your home	7	9.3
Fighting	Your brothers are fighting	7	9.3
Sickness	You went to hospital	5	6.7
Death	Ek het my beste vriend verloor <i>I lost my best friend</i>	5	6.7
School work	Ek het nie goed in my skoolwerk gedoen nie <i>I did not do well in my school work</i>	5	6.7
Parents occupation	My ma het haar werk verloor <i>My mother lost her job</i>	5	6.7
Fire	Your home burned down	4	5.3
Divorce/separation	My ouers het geskei <i>My parents divorced</i>	4	5.3
Safety	Jy het nie veilig gevoel nie <i>You did not feel safe</i>	3	4.0
Fear	Jy was bang gister <i>You were scared yesterday</i>	3	4.0
Money	My father no give me money	2	2.7
Food	Your parents live with no food	2	2.7
Jail	My broer is in die tronk <i>My brother is in jail</i>	2	2.7
Drugs	My ma gebruik dwelms <i>My mother uses drugs</i>	1	1.3
Other	I don't know where my dad he is	20	26.7
Total		75	100.1

*Note: Total percentage does not equal 100 due to rounding; For the sake of clarification, English translation (in italics) are offered*

Upon exploration of these verbatim responses, the information was grouped into 15 categories (see Table 7). Approximately 9.3% of the total open-ended items ( $N = 75$ ) pertained to the 'physical violence' and 'fighting' categories respectively, and were the most frequently endorsed.

#### **4.6 Chapter summary**

This chapter began by providing a reliability analysis (internal consistency) of the Dominic-R and SCAS questionnaires. Results indicated that both scales yielded acceptable internal consistency.

Thereafter, results pertaining to the relationship between anxiety symptoms and stressful life events were presented. Descriptive statistics for reported anxiety symptoms showed contradictory results between the two anxiety questionnaires. In explanation, girls reported higher levels of anxiety than boys on the total Dominic-R score, whereas results obtained for the SCAS showed that boys displayed higher levels of anxiety than girls.

Regardless, an analysis of variance yielded no significant effects for gender on the Dominic-R and SCAS scores.

When looking at the main finding of the study, results proved that a small, yet significant, positive correlation was obtained between anxiety symptoms and stressful life events experienced.

Furthermore, no significant effects for age and gender were obtained for stressful life events experienced.

Finally, results provided modest outcomes for the Dominic-R's internal consistency and convergent validity within a marginalised South African sample.

The results section concluded with a presentation and examples of the verbatim stressful life events responses.

## CHAPTER 5

### DISCUSSION

In Chapter 5 the results are discussed in terms of the study aims, namely assessing whether anxiety symptoms are correlated with stressful life events, and whether the Dominic-R can effectively be administered within a sample of marginalised South African youths.

Using three self-report questionnaires; the Dominic-R, the SCAS and the MLEC-M, the relationship between anxiety symptoms and stressful life events was assessed. Furthermore, the psychometric properties and cross-cultural validation of the Dominic-R was examined.

#### **5.1 Reliability analyses of questionnaires**

##### **5.1.1 Dominic-R**

Cronbach alpha values were computed for the Dominic-R total anxiety score as well as for its subscales (see Table 1). A Cronbach alpha value of 0.85 indicated that the internal consistency of the Dominic-R total score was high and thus acceptable (Field, 2005; Huysamen, 1996). A Guttman split-half value of 0.89 further highlighted the scale's sufficient reliability. Likewise, the alpha values obtained for the Dominic-R's subscales were satisfactory.

It must be noted that a lengthier explanation with regards to the reliability of the Dominic-R is given in section 5.3.1 of this chapter.

### 5.1.2 SCAS

Again, Cronbach values were computed for the SCAS total anxiety score as well as for its subscales (see Table 1). As can be seen in Table 1, the internal consistency of the SCAS was slightly higher than that of the Dominic-R. Again, internal consistency of the entire scale (Cronbach alpha of 0.91), as well as for the generalised anxiety, panic/agoraphobia, and obsessions/compulsions subscales were sufficient (Field. 2005). The Cronbach alpha's obtained for the remaining three subscales did not yield convincing internal consistency ( $\alpha < 0.70$ ).

The SCAS' internal consistency compares favourably with the normative data presented by Spence (1998) and Spence et al. (2003). Both Spence (1998) and Spence et al. (2003) obtained an alpha value of 0.92 for the SCAS total score.

Furthermore, this result compares favourably with previous research within a South African sample (Muris, Schmidt et al., 2002). In explanation, an alpha value of 0.92 was obtained for the total SCAS score, which is almost identical to the 0.91 alpha value obtained in the current study. One would expect this as both studies recruited their samples from identical populations.

The alpha values obtained in the present study thus confirmed the results obtained in previous studies within an identical sample population, and thus further attests to its utilisation within a South African context.

## **5.2 The relationship between anxiety symptoms and stressful life events**

### **5.2.1 Descriptive statistics**

#### **5.2.1.1 Anxiety symptoms**

The descriptive results of the present study obtained for anxiety symptoms (see Tables 2 and 3) are inconsistent with those obtained in previous South African, as well as American and Australian research. In explanation, as highlighted by the results, there was a tendency for girls to report higher levels of anxiety than boys on the total Dominic-R anxiety score. Results obtained by the SCAS on the other hand revealed contradictory results. In explanation, boys displayed higher levels of anxiety than their female peers.

Regardless however, these differences were not significant within the present studies' sample indicating that for this sample specifically the genders did not differ significantly regarding their anxiety levels.

The tendency for girls to display higher levels of anxiety than boys seems to be the general trend, as is replicated in previous studies. For example, the results obtained were congruent with those obtained by Muris et al. (2006) whereby it was found that girls displayed significantly higher anxiety levels than boys in their sample of South African youths. This trend is further displayed in the Burkhardt et al. (2003) study on the levels of fear in South African children. It was found that a significant gender effect existed with girls exhibiting higher fear scores than boys (Burkhardt et al., 2003).

These gender differences have also been found in studies that were done with German and Australian samples. For example, it was found by Essau et al. (2000) that girls displayed significantly higher rates of anxiety disorders than boys in a German adolescent sample.

Furthermore, Spence et al. (2003) also reported that girls displayed significantly higher levels of anxiety than their male peers in an Australian sample.

#### **5.2.1.2 Stressful life events**

To the author's knowledge, comparable data with regards to stressful life events within a South African sample does not exist. One must bear in mind that the results obtained in the present study yielded non-significant effects for gender on the number of stressful life events experienced as well as on the intensity thereof. This highlights that for the present sample specifically, gender differences bore no impact on the number and intensity of stressful life events experienced.

Regardless, in comparison with American research, the tendency for girls to report more stressful life events experienced than boys (see Table 4) is congruent with the results obtained by Flannery (1986) whereby girls reported significantly more stressful life events than boys. Furthermore, girls also reported their life events as being more stressful than boys (Flannery, 1986).

The results from the current study (see Table 4) are additionally congruent with the normative data of Johnson and McCutcheon (1980) whereby girls displayed higher levels of life change scores (obtained by summing the impact ratings of the event) than boys.

#### **5.2.2 Correlations between anxiety symptoms and stressful life events**

Pearson's correlations were computed to assess the relationship between anxiety symptoms and stressful life events (see Table 5). It must however be noted that, due to the studies cross-sectional design, causal relationships between these two variables cannot be automatically assumed (Graziano & Raulin, 2004).



For the purposes of clarification it is necessary that the following literature (as highlighted in Chapter 2) be repeated: it has been widely documented that stressful events play a central role in the development of child and adolescent psychopathology (Flannery, 1986; Grant et al., 2003; Walker & Greene, 1987). In explanation, it has been proposed that certain risk factors, namely adverse living conditions and poverty, influence the types and severity of stressful life events experienced by individuals, and that this consequently influences the development of childhood anxiety symptoms (Donovan & Spence, 2000; Ollendick et al., 2001).

To reiterate the results of the present study (see Table 5), albeit rather weak, significant positive correlations were nonetheless obtained for the relationship between anxiety symptoms and stressful life events experienced. This finding is congruent with that of the Life Events Checklists' author's namely Johnson & McCutcheon (1980) whereby a significant correlation exists between the number of stressful life events experienced and anxiety symptoms. Similarly, Walker and Greene (1987) found a significant positive association between the number of stressful life events experienced and psychopathology in their adolescent sample.

Further, higher intensity scores were associated with higher levels of anxiety (Johnson & McCutcheon, 1980). This was additionally highlighted by the results obtained by Ollendick et al. (2001) whereby it was found that the intensity level of stressful life events experienced was associated with the onset of anxiety symptoms.

With regards to the present study, the small correlations obtained between anxiety scores and stressful life events highlights the weak association between the two constructs. Implications of these results thus suggest that for this sample the results are not convincing that stressful life

events, as confirmed by these weak correlations, are strongly linked to the expression of anxiety symptoms.

### **5.2.3 Differences for age and gender**

As previously mentioned, no significant effects for age and gender were obtained for stressful life events experienced within the present study's sample. This suggests that the experience of stressful life events is not influenced by age and gender. Again, the results obtained are contradictory to those obtained in previous research (Flannery, 1986; Johnson & McCutcheon, 1980; Walker & Greene, 1987).

## **5.3 Psychometric properties of the Dominic-R**

### **5.3.1 Internal consistency**

According to Huysamen (1996) if a scale is being used to make decisions about an individual then the reliability coefficient should be 0.85 or higher. As can be seen in sections 4.2 and 5.1.1, results of the present study indicated acceptable internal consistency for the Dominic-R total score (see also Table 1). In terms of the internal consistencies of the Dominic-R's various subscales, however, results obtained were slightly lower than that of the entire scale. These were nonetheless acceptable as all three of the subscale alphas were greater than or very close to 0.70 (Field, 2005).

To highlight, these results were comparable with those obtained by Valla et al. (1994) in their exploratory study on the reliability and validity of the Dominic-R within a general population sample, whereby it was ascertained that the scale provided acceptable reliability (Valla et al., 1994).

The alpha values of the Dominic-R thus indicate that the scale items seem to be measuring the same latent construct namely, anxiety symptoms regardless that the scale was originally constructed in a non-South African sample. Implications for this include that the results look promising with regards to its utilisation within the South African context.

Furthermore and as mentioned in Chapter 3, the Dominic-R was administered within a group setting as opposed to on a one-on-one basis. The alpha values obtained in the present study thus provide evidence for the scales utilisation within a group setting.

### **5.3.2 Convergent validity**

The Dominic-R has been found to compare favourably with other child anxiety assessment questionnaires (Murphy et al., 2000; Valla et al., 1997). For the purposes of the current study, Pearson's correlations were computed between the Dominic-R and the SCAS (for which sound South African psychometric data already exists) total scores as well as their subscales (see Table 6) so as to assess the Dominic-R's convergent validity.

As highlighted in the results section of this document, a significant Pearson correlation of 0.64 was obtained between the Dominic-R and SCAS total anxiety score. Furthermore, when assessing the questionnaires' subscales that are supposed to measure the same anxiety symptoms, the following significant results were obtained: a correlation of 0.39 was obtained between the Dominic-R and SCAS generalised anxiety scores, and a correlation of 0.50 was obtained between the Dominic-R and SCAS separation anxiety scores.

Implications of these weak correlations suggest that the Dominic-R did not measure anxiety symptoms as effectively as other anxiety measuring instruments might within this sample. The

study by Muris, Schmidt and Merckelbach (2000) highlights that these correlations obtained between the Dominic-R and SCAS anxiety scores could have been higher. In explanation, their results yielded a significant Pearson correlation coefficient of 0.89 between the SCAS and SCARED (Screen for Child Anxiety Related Emotional Disorders), which clearly is much higher than the correlation of 0.64 obtained between the two scales used in the current study.

The correlation between the two scales used in Muris, Schmidt et al. (2002) South African study was slightly lower than those obtained by Muris, Schmidt et al. (2000). In explanation, when assessing the relationship between the SCAS and SCARED scales in a South African sample, their results indicated a significant Pearson correlation of 0.76 between the two scales. Again, although lower than the value obtained by Muris, Schmidt et al. (2000), the value still exceeded that of 0.64 obtained in the present study.

These results thus imply that although a significant correlation was obtained between the Dominic-R and SCAS questionnaires, other scales may provide better evidence for their assessment of childhood anxiety within an international (Muris, Schmidt et al., 2000), as well as South African sample (Muris, Schmidt et al., 2002).

#### **5.4 Exploration of the verbatim stressful life event responses**

These responses were recorded by the participants in the additional open-ended spaces provided at the end of the MLEC-M. As can be seen from Table 7, the majority of these responses pertained to physical violence and fighting, as well as to sickness and death. These responses are in accordance with the research by Dawes et al. (2006) that emphasises these difficult contextual circumstances, and highlights how prominent violence and sickness is particularly amongst

children residing in marginalised communities. In essence, these events could be indicative of the increased levels of anxiety within these communities.

These responses therefore highlight the necessity that future research looks at these important variables as reported by South African children, so as to ensure the effective implementation of intervention programs within these communities.

Furthermore, as already mentioned, the importance of ensuring any scale's cross-cultural validation within a specific sample cannot be underestimated (Foxcroft, 1997; Venter, 2000). The implication of these verbatim responses thus suggests that the MLEC-M does not necessarily tap into the possible life events that are experienced by specifically marginalised South African youths. More evidence is thus needed to assess the MLEC-M's applicability within the South African context, which will include validating further its reliability and validity with a South African sample.

## **5.5 Chapter summary**

The findings of the present study were discussed in Chapter 5. This included a reliability analysis (internal consistency) report of the Dominic-R and SCAS questionnaires. Thereafter, a discussion with regards to the positive correlation between anxiety symptoms and stressful life events was presented. Finally, the psychometric properties of the Dominic-R when administered within a marginalised South African sample were discussed. The chapter concluded with looking at the verbatim responses obtained for stressful life events.

The subsequent chapter includes a summary of the main findings of the present study, as well as the study's limitations. Lastly, the recommendations for future research with regards to the childhood anxiety area of expertise are given.

## CHAPTER 6

### CONCLUSION, LIMITATIONS, AND RECOMMENDATIONS

To reiterate, the motivation for the current study stemmed from the need to gain a clearer understanding of the possible variables that influence the onset and expression of anxiety symptoms in particularly marginalised South African communities. Reasons for this include that the high prevalence of childhood anxiety within these communities (Burkhardt et al., 2003; Muris et al., 2006; Muris, Schmidt et al., 2002), and the increased levels of anxiety within these communities as compared to children from higher socio-economic status areas (Muris et al., 2006; Muris, Schmidt et al., 2002), has been emphasised by previous South African research.

Furthermore, while research done in America and Australia documented that a significant relationship exists between stressful life events and the expression of anxiety symptoms in children (Donovan & Spence, 2000; Flannery, 1986; Johnson, 1986; Johnson & McCutcheon, 1980; Tiet et al., 2001), the current study thus sought to address whether a relationship existed between anxiety symptoms and stressful life events within specifically a marginalised South African sample.

Furthermore, whilst South African research has emphasised the high prevalence of childhood anxiety, particularly in marginalised communities (Muris et al., 2006; Muris, Schmidt et al., 2002), appropriate child-friendly measuring instruments within the multi-cultural and multi-lingual society of South Africa, are lacking (Kanjee, 2001). As a consequence therefore the

current study additionally aimed at assessing the psychometric properties of the Dominic-R when administered specifically within a marginalised South African sample.

Chapter 6 highlights the main findings of the present study that emerged as a result of addressing the aforementioned research questions. The implications of the study within the South African context are also discussed. Finally, the limitations of the present study, as well as the recommendations for future research are given.

## **6.1 Main findings of the study**

### **6.1.1 Findings with regards to the relationship between anxiety symptoms and stressful life events**

Small, yet significant positive correlations were obtained between anxiety symptoms (SCAS total score) and the number of stressful life events experienced ( $r = 0.56, p < 0.01$ ), and anxiety symptoms (SCAS total score) and the event intensity ( $r = 0.55, p < 0.01$ ). These results highlight a weak correlation between the two constructs.

### **6.1.2 Findings with regards to the psychometric properties of the Dominic-R within a South African sample**

#### **6.1.2.1 Internal consistency**

With regards to the Dominic-R's internal consistency, a Cronbach alpha value of 0.85 indicated that the internal consistency of the Dominic-R total score was high and thus acceptable within a South African sample. Likewise the alpha values obtained for the Dominic-R's subscales (see Table 1) were satisfactory when administered within this sample.



### **6.1.2.2 Convergent validity**

With regards to the Dominic-R's convergent validity, a significant Pearson correlation of 0.64 was obtained between the Dominic-R and SCAS (for which South African psychometric evidence already exists) total anxiety scores. Albeit weak, significant positive correlations were additionally obtained between the two scales' subscales that are supposed to measure the same anxiety symptoms (see Table 6).

## **6.2 Implications of the study within the South African context**

As previously mentioned, and with regards to the present study, the small correlation obtained between anxiety scores and stressful life events highlights the weak association between the two constructs. Implications of these results thus suggest that for a marginalised South African sample the results are not convincing that stressful life events, as confirmed by these weak correlations, are necessarily strongly linked to the expression of anxiety symptoms.

Further, the implications of the weak correlations obtained between the Dominic-R and SCAS questionnaires suggest that the Dominic-R did not measure anxiety symptoms as effectively as other anxiety measuring instruments (for example, the SCARED) might within an identical sample. In explanation, previous research within South African samples that used the SCAS and SCARED to acquire their data obtained results that yielded a much higher convergent validity between the two scales (Muris et al., 2002).

The implementation of the Dominic-R within a South African setting is not, however, without its advantages (as highlighted by its high and acceptable alpha values). For example, it was administered for the first time within a group setting. Not only did the scale yield high and acceptable internal consistency when administered for the first time in a South African sample,

these alpha values were still high regardless that the scale was administered in a group setting (as opposed to on a one-on-one basis). This was thus an aspect of the current study that added to its value whereby this result highlighted that the advantages of the ability for the Dominic-R to screen for DSM-IV anxiety disorders in a time effective manner cannot be underestimated.

Furthermore and as previously highlighted, the importance of ensuring a scale's cross-cultural validation within a specific sample should not be overlooked (Foxcroft, 1997; Venter, 2000). The implication of the verbatim stressful life events responses (see Table 7) suggest that the MLEC-M does not necessarily tap into the possible life events that are experienced by marginalised South African youths specifically. These responses highlight events that may be unique to South African children, and that have not been catered for in the original MLEC-M scale. Subsequently more evidence is thus needed to assess how applicable the items in the entire scale are within the South African context.

Lastly, a reliability analysis of the SCAS (see Table 1) added to the existing literature with regards to the scales reliability within South African samples (Muris et al., 2002; Mostert, 2007). The results of the present study thus once again highlight the SCAS' viable usability within the South African context.

### **6.3 Limitations of the study**

It must be noted that the present study was not without its limitations.

Firstly, due to certain methodological constraints such as the study's cross-sectional research design, causal relationships between anxiety symptoms and stressful life events could not be ascertained (Graziano & Raulin, 2004). In other words, the present study was unable to determine

whether the stressful life events experienced resulted in higher levels of anxiety, or whether higher levels of anxiety resulted in more events being experienced as stressful.

Secondly, a convenience sample of schools and a response rate of only 22.4% resulted in possible selection bias. As a result the findings of this study may not be generalisable to all marginalised black and coloured South African youths residing in Stellenbosch, South Africa.

The present study was subject to the limitations of self-report questionnaires. In explanation, the poor concordance between child and parent reports of anxiety (Schniering et al., 2000). Thus in the present study, by taking parent reports into consideration, it may well have added to the richness of the data obtained.

With regards to the assessment of the anxiety scales' reliability, their reliability was only assessed by means of internal consistency. As highlighted by Muris, Schmidt et al. (2002), examining other aspects of reliability such as test-retest stability and interrater reliability within South African samples specifically cannot be underestimated.

Furthermore, the MLEC-M was administered to assess the participants' stressful life events experienced. As previously highlighted, no South African psychometric evidence exists for its utilisation within a South African sample. Regardless of this, the present study failed to assess the scales psychometric properties (for example, test-retest reliability and convergent validity) when administered within a South African sample.

Another limitation is the fact that the Dominic-R was administered within a group setting as opposed to on a one-on-one basis. This may have resulted in entirely different findings as opposed to if it was completed on a one-on-one basis.

Lastly, whilst the study sample included individuals falling into the early adolescent developmental phase, in essence the Dominic-R's picture content, which was designed to screen for anxiety disorders in children (Valla et al., 2000), was not applicable for these older children. In turn, this may have influenced the scales reliability, as well as the participants' anxiety scores.

#### **6.4 Recommendations for future research**

By taking the present studies implications and limitations into account, the recommendations for future research can be highlighted as follows.

Firstly, in order to ascertain the direction of the relationship between anxiety symptoms and stressful life events, future research should focus on employing an experimental research design (Graziano & Raulin, 2004). By doing so, the nature of the relationship between these two constructs will become clearer. In explanation, one will be able to determine whether stressful life events result in anxiety symptoms or whether anxiety symptoms result in more stressful life events being experienced.

Furthermore, in order to gain a more explicit representation of childhood anxiety symptoms and stressful life events in South African children, future research should aim at recruiting a research sample that is representative of the diverse and multi-lingual nation of South Africa.

To gain an even richer representation of childhood anxiety within the present study sample, parent and teacher reports could additionally have been taken into consideration, and thus should be the focus for future studies.

With regards to the assessment of the Dominic-R and SCAS scales' reliability within a marginalised sample of South African youths, it is imperative that future research examines the other aspects of reliability, such as test-retest stability and interrater reliability, as well. These results will attest further to the scales' applicability or non-applicability within South African samples.

Similarly, because South African psychometric evidence does not exist with regards to the MLEC-M's utilisation within a South African sample, it is imperative that future research provides results for the scales test-retest reliability and convergent validity. As a result, the evidence that assesses the MLEC-M's applicability within the South African context will be provided.

Furthermore, future research must take into account the open-ended stressful life events responses. The responses highlight events that may be unique to South African children, and that have not been catered for in the original MLEC-M scale. It is thus imperative that future research take into account how applicable to items in the scale are within a South African sample.

Finally, with regards to evaluating whether the Dominic-R can effectively be administered within South African samples, it is imperative that future research takes the age group for which it is originally intended (6- to 11- years) (Valla et al., 2000) into account.

## **6.5 Concluding remarks**

Despite the study's limitations, aspects of the study that contributed to its value most certainly existed. Firstly, the results of the study provided tentative evidence for the utilisation of the Dominic-R within a sample of marginalised South African youths. Furthermore, evidence for the Dominic-R's utilisation within a group setting was provided. This finding is extremely beneficial for South African researchers and clinicians with regards to assessing anxiety symptoms in large samples in a time and cost effective manner.

Finally, the significant correlation obtained between anxiety scores and stressful life events further highlights how prevalent undesired events are in marginalised communities and furthermore that they may contribute to the expression of childhood anxiety symptoms. All in all this information will allow for the more effective implementation of childhood anxiety prevention programs or treatment strategies that are lacking within these South African communities.

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## **ADDENDUM A**

Schools written invitation

Department of Psychology

Stellenbosch University

Private Bag X1

Matieland

7602

04 September 2006

### **DETAILS OF ANXIETY SYMPTOMS AND STRESSFUL LIFE EVENTS RESEARCH IN CHILDREN**

Dear .....

At the University of Stellenbosch, research is currently being undertaken to assess anxiety disorder symptoms and stressful life events in South African youths. Previous research has indicated that childhood anxiety symptoms are the most commonly reported psychopathology, and that they can significantly interfere in a child's normal daily functioning. More importantly, South African research indicates that South African children display the highest levels of anxiety symptoms when compared to their Western peers. Furthermore, it has been found that stressful life events contribute significantly to the onset of these anxiety symptoms

It is thus imperative that research be undertaken so as to examine the differences and/or similarities found in terms of anxiety symptoms and stressful life events between children

residing within various South African communities. The benefits of the research include that if these differences and/or similarities can be ascertained, possible anxiety intervention programs can effectively be implemented within each of these groups.

The research project has been approved by The Western Cape Education Department and the Research ethics committee, Tygerberg Campus, Stellenbosch University. Furthermore, the parents and children will be informed and asked to give consent before any research is undertaken. Thereafter, all the participating children will be asked to complete 3 short and child-friendly questionnaires, which will not take longer than an hour. These questionnaires will be administered at your earliest convenience during an appropriate time slot negotiated with you, thus the implementation thereof will not interfere with the children's school curriculum. The nature of the research entails that assenting children in Grades 5-, 6-, 7- will be required to fill out the questionnaires. If possible, I would greatly appreciate it if the questionnaires be administered to each grade separately.

Your assistance in the above regard will be highly appreciated and it is hoped that your participation in this research will be of benefit to both yourself and the children. Please feel free to contact me at any time should you feel it necessary at 084 580 2438. I thank you in advance for your co-operation.

Yours sincerely,

Candice Gene Hartley (Miss)

MA (Thesis) Psychology Student

Stellenbosch University

## **ADDENDUM B**

Parent/legal guardian information letter

**TITLE OF THE RESEARCH PROJECT:** Anxiety disorder symptoms in South African youths: Their assessment and relationship with stressful life events.

**REFERENCE NUMBER:** NO6/08/164

**PRINCIPAL INVESTIGATOR:** Candice Gene Hartley

**ADDRESS:** Department of Psychology, Stellenbosch University, Private Bag X1, Matieland, 7602

**CONTACT NUMBER:** 084 580 2438

Your child is being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please feel free to ask the researcher any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how your child could be involved. Also, your child's participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you or your child negatively in any way whatsoever. You are also free to withdraw him/her from the study at any point, even if you do initially agree to let him/her take part.

This study has been approved by the Committee for Human Research at Stellenbosch University and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

**What is this research study all about?**

The purpose of the research is to assess the relationship between anxiety disorder symptoms and stressful life events in South African youths, and to ascertain the similarities and/or differences found thereof. Previous research has indicated that South African children display the highest levels of anxiety symptoms when compared to their Western counterparts, and that these symptoms can interfere significantly in a child's daily functioning. Furthermore, it has been found that certain life events, that may be stressful for a child, contribute significantly to the onset of clinical anxiety disorders. The benefits of the research include that if these differences and/or similarities can be ascertained, possible anxiety intervention programs can effectively be implemented within South African samples.

Should you give consent, your child will be asked to complete 3 short and child-friendly questionnaires. These questionnaires will be administered during an appropriate time slot negotiated with the school, thus the implementation thereof will not interfere with the children's school curriculum.

**Why has your child been invited to participate?**

The target age group of the study includes children in Grades 5-, 6-, and 7-. As your child falls within this age bracket, he/she is being invited to participate in the study.

**What will your responsibilities be?**

As the parent/guardian of your child, your responsibility includes signing, and returning, the informed consent form attached if you will allow your child to participate. Please note that participation is not compulsory, and if you decline consent, your child will not be penalised in

any way. Research will only commence once informed consent from both the parents/guardians and the children have been obtained.

**Will your child benefit from taking part in this research?**

No direct personal benefits exist for your child if he/she participates in the research. However, those children, as identified by themselves, their parents or teacher, that experience any anxiety related problems can go to the Centre for Community Psychological Services: Unit for Psychology, at The University of Stellenbosch, for further help. Dr. H. Loxton – a registered counselling psychologist – tel: 021 808 3417 can be contacted in this regard.

**Are there any risks involved in your child taking part in this research?**

As the research is non-therapeutic in nature, no foreseeable psychological risks and physical discomforts that may pose a threat to the well being of your child exist.

**Who will have access to your child's questionnaires?**

All information collected from the children will be treated as confidential at all times, and all children will remain anonymous. When presenting the results, children will only be referred to in terms of their sex, age, and ethnicity. No information will be able to be linked directly to your child in any way. Only my supervisor and I (primary investigator) will have access to the information.

**Will you or your child be paid to take part in this study and are there any costs involved?**

You or your child will not be paid to take part in the study. There will be no costs involved for you if your child does take part.



**Is there any thing else that you should know or do?**

- You can contact both me and Dr H. Loxton (supervisor) tel 021-808 3417 if you have any further queries or encounter any problems.
- You can contact the Committee for Human Research at 021-938 9207 if you have any concerns or complaints that have not been adequately addressed by the researcher.

**ADDENDUM C**

Consent form: Parent / legal Guardian

By signing below, I (name of parent/legal guardian) ..... agree to allow my child (name of child) ..... who is ..... years old, to take part in a research study entitled: **Anxiety disorder symptoms in South African youths: their assessment and relationship with stressful life events.**

I declare that:

- I have read or had read to me this information and consent form and that it is written in a language with which I am comfortable.
- If my child is older than 7 years, he/she must agree to take part in the study and his/her ASSENT must be recorded before any research is undertaken.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to let my child take part.
- I understand that all information gathered from the study will remain confidential and anonymous.
- I may choose to withdraw my child from the study at any time and my child will not be penalised or prejudiced in any way.
- I understand that no potential risks exist for my child if my child participates in this study.
- I understand that the questionnaires will be administered in my child's medium of instruction at school.
- I understand that the information gathered in the study will be published; however, any of the presented information will not be linked to my child in any way.

Signed at (place) ..... on (date) ..... 2006.

.....  
Signature of parent/legal guardian

.....  
Signature of witness

## ADDENDUM D

### Participant assent form

I (Name of Child/Minor)..... have been invited to take part in a research study entitled: **Anxiety disorder symptoms in South African youths: their assessment and relationship with stressful life events.**

- The researcher, my teacher, and my parents have explained the details of the study to me and I understand what they have said to me.
- They have also explained that this study will involve completing 3 short questionnaires, which will take place during normal school hours
- I also know that I am free to withdraw from the study at any time if I am unhappy, and that I will not be penalised in any way if I do so.
- By writing my name below, I voluntary agree to take part in this research project. I confirm that I have not been forced by the researcher to take part.

.....

Name of child

.....

Independent witness

## ADDENDUM E

### Department of Education, Western Cape: Permission letter

Navrae  
Enquiries  
IMibuzo  
Telefoon  
Telephone  
IFoni  
Faks  
Fax  
IFeksi  
Verwysing  
Reference  
ISalathiso

**Dr RS Cornelissen**  
  
**(021) 467-2286**  
  
**(021) 425-7445**  
  
**20060705-0024**



**Wes-Kaap Onderwysdepartement**

**Western Cape Education Department**

**ISEbe leMfundo leNtshona Koloni**

Miss Candice Hartley  
Pearl's Place No. 1  
Klein Welgevonden  
STELLENBOSCH  
7600

**Dear Miss C. Hartley**

**RESEARCH PROPOSAL: ANXIETY DISORDER SYMPTOMS IN SOUTH AFRICAN YOUTHS: THEIR ASSESSMENT AND RELATIONSHIP WITH STRESSFUL EVENTS.**

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **17<sup>th</sup> July 2006 to 22<sup>nd</sup> September 2006**.
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December 2006).
7. Should you wish to extend the period of your survey, please contact Dr R. Cornelissen at the contact numbers above quoting the reference number.
8. A photocopy of this letter is submitted to the Principal where the intended research is to be conducted.
9. Your research will be limited to the following schools: \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_
10. A brief summary of the content, findings and recommendations is provided to the Director: Education Research.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:  
**The Director: Education Research  
Western Cape Education Department  
Private Bag X9114  
CAPE TOWN  
8000**

We wish you success in your research.

Kind regards.

Signed: Ronald S. Cornelissen  
for: **HEAD: EDUCATION**  
**DATE: 05<sup>th</sup> July 2006**

MELD ASSEBLIEF VERWYSINGSNOMMERS IN ALLE KORRESPONDENSIE / PLEASE QUOTE REFERENCE NUMBERS IN ALL CORRESPONDENCE /  
NCEDA UBHALE INOMBOLO ZESALATHISO KUYO YONKE IMBALELWANO

GRAND CENTRAL TOWERS, LAER-PARLEMENTSTRAAT, PRIVAATSAK X9114, KAAPSTAD 8000  
GRAND CENTRAL TOWERS, LOWER PARLIAMENT STREET, PRIVATE BAG X9114, CAPE TOWN 8000

WEB: <http://wced.wcape.gov.za>

**INBELSENTRUM /CALL CENTRE**

INDIENS NEMING- EN SALARISNAVRAE/EMPLOYMENT AND SALARY QUERIES ☎0861 92 33 22

VERHOOR SKOLE/SAF SCHOOLS ☎ 0800 45 46 47

## ADDENDUM F

### Research Ethics Committee: Permission letter

UNIVERSITEIT • STELLENBOSCH • UNIVERSITY  
jou kennisvennoot • your knowledge partner

21 September 2006

Ms CG Hartley  
Dept of Psychology  
Stellenbosch Campus

Dear Ms Hartley

**RESEARCH PROJECT:** "ANXIETY DISORDER SYMPTOMS IN SOUTH AFRICAN YOUTHS: THEIR ASSESSMENT AND RELATIONSHIP WITH STRESSFUL LIFE EVENTS "

**PROJECT NUMBER :** N06/08/164

At a meeting of the Committee for Human Research that was held on 6 September 2006 the above project was approved on condition that further information that was required, be submitted.


This information was supplied and the project was finally approved on 20 September 2006 **for a period of one year from this date**. This project is therefore now registered and you can proceed with the work. Please quote the above-mentioned project number in all further correspondence.

**Please note that a progress report (obtainable on the website of our Division) should be submitted to the Committee before the year has expired. The Committee will then consider the continuation of the project for a further year (if necessary).**

Patients participating in a research project in Tygerberg Hospital will not be treated free of charge as the Provincial Government of the Western Cape does not support research financially.

Due to heavy workload the nursing corps of the Tygerberg Hospital cannot offer comprehensive nursing care in research projects. It may therefore be expected of a research worker to arrange for private nursing care.



Yours faithfully



**CJ VAN TONDER**  
**RESEARCH DEVELOPMENT AND SUPPORT (TYGERBERG)**  
Tel: +27 21 938 9207 / E-mail: [cjvt@sun.ac.za](mailto:cjvt@sun.ac.za)

CJVT/pm

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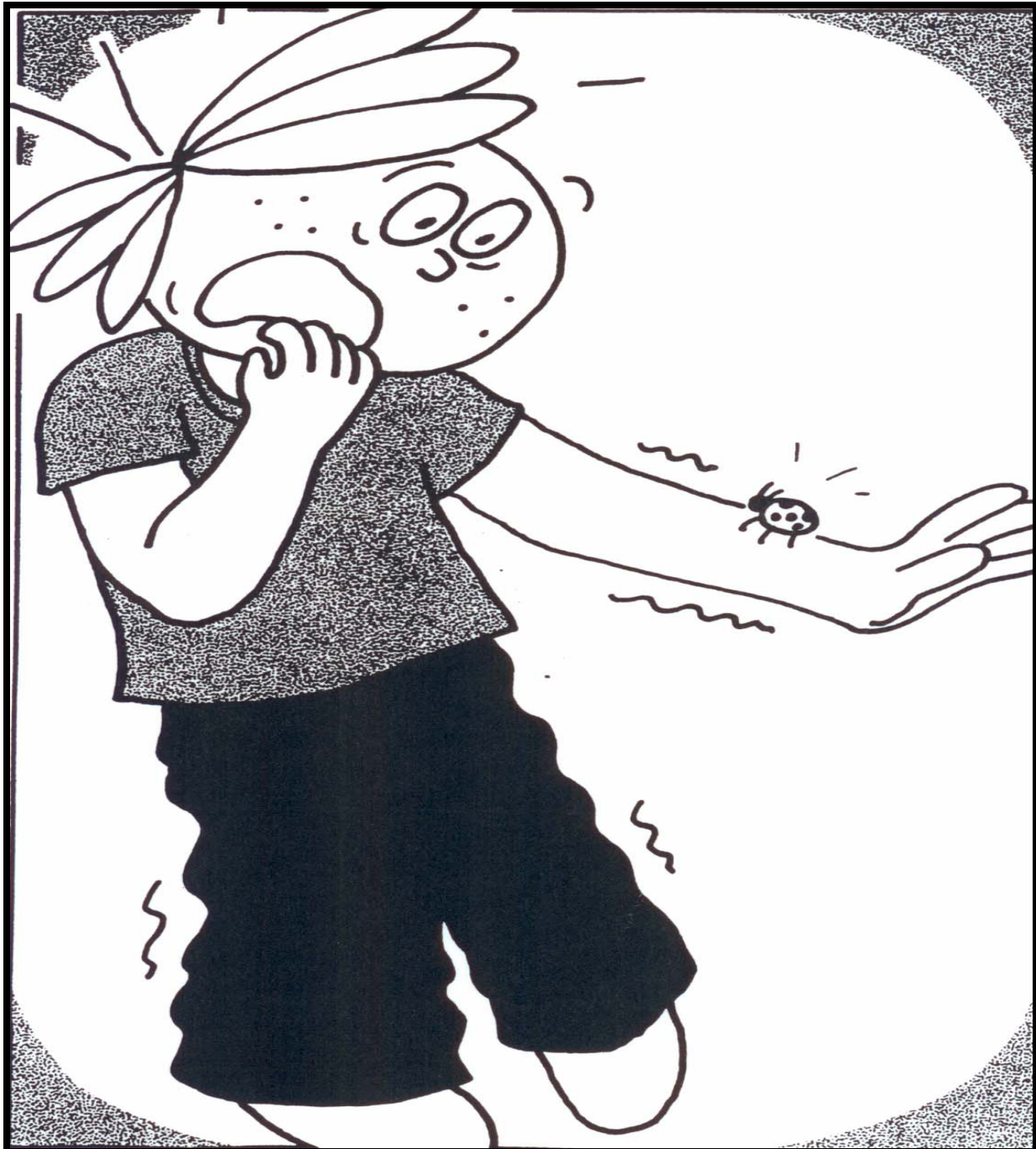
 **Fakulteit Gesondheidswetenskappe • Faculty of Health Sciences** 

Verbind tot Optimale Gesondheid • Committed to Optimal Health  
**Afdeling Navorsingsontwikkeling en -steun • Research Development and Support Division**  
Posbus/PO Box 19063 • Tygerberg 7505 • Suid-Afrika/South Africa  
Tel: +27 21 938 9677 • Faks/Fax: +27 21 931 3352  
E-pos/E-mail: [rdedinfo@sun.ac.za](mailto:rdedinfo@sun.ac.za)



## ADDENDUM G

Dominic-R: Picture example



1. ARE YOU VERY SCARED OF INSECTS?

\_\_\_\_\_

1. IS JY BAIE BANG VIR INSEKTE?